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Use A Web Cam For Security p.45



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# Smart Computing®

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In Plain English

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# Time For A PC Clean-Up

Is Your PC Feeling Sluggish?  
We Show You How To:

Tackle & Avoid Viruses

Clean Up Your Hard Drive

Simplify Internet Downloads

Customize & Maintain Your System

Degunk Your Registry



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IBM recommends Microsoft® Windows® XP Professional.



IBM ThinkPad R Series

### GO with IBM Think Express Program

IBM ThinkExpress models are designed, configured and priced with small to medium-size businesses in mind.

CNET Editors Choice Award, March, 2004  
IBM ThinkPad X40

**\*Availability:** All offers subject to availability. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM is not responsible for photographic or typographic errors. **Pricing:** does not include tax or shipping and is subject to change without notice. Reseller prices may vary. **Warranty:** For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC 27709, Attn: Dept JDJA/B203. IBM makes no representation or warranty regarding third-party products or services. **Footnotes: (1) Mobile Processor:** Power management reduces processor speed when in battery mode. **(2) Wireless 11a, 11b and 11g:** based on IEEE 802.11a, 802.11b and 802.11g, respectively. An adapter with 11a/b, 11b/g or 11a/b/g can communicate on either or any of these listed formats respectively; the actual connection will be based on the access point to which it connects. **(3) Included software:** may differ from its retail version (if available) and may not include user manuals or all program functionality. License agreements may apply. **(4) Hard drive:** GB = billion bytes. Accessible capacity is less; up to 4GB is service partition. **(5) Memory:** For PCs without a separate video card, memory supports both system and video. Accessible system memory is up to 64MB less than the amount stated, depending on video mode. **(6) Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges. **(7) ServicePac services:** are available for machines normally used for business, professional or trade purposes, rather than personal, family or household purposes. Service period begins with the equipment date of purchase. Service levels are response-time





## Put a solid barrier between your wireless PC and thieves.

As the world's most secure wireless PCs, these IBM wireless ThinkPad® notebooks offer an added layer of data protection – a vaultlike combination of a built-in security chip and sophisticated data encryption software. In fact, it's so advanced, it actually makes data unreadable if tampered with. And only IBM offers PCs with this level of security as a standard feature. Plus, with Intel® Centrino™ Mobile Technology and on-the-fly folder encryption, users can work wherever they please, knowing that their data will be protected. No matter who's lurking around. To see a demo, go to [ibm.com/shop/m473](http://ibm.com/shop/m473). **Instead of a welcome mat.**

Secure wireless. **Only on a ThinkPad.**

1 866 723-2024 | [ibm.com/shop/m473](http://ibm.com/shop/m473)



### IBM ThinkPad R51

Ultimate Value

#### Distinctive IBM Innovations:

- IBM Embedded Security System 2.0<sup>13</sup> – Strongest security as a standard feature

#### System Features:

- Intel® Centrino™ Mobile Technology
  - Intel Pentium™ M Processor 1.50GHz<sup>1</sup>
  - Intel PRO/Wireless Network Connection 802.11b<sup>2</sup>
- Microsoft Windows XP Professional<sup>3</sup>
- 14.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM<sup>5</sup>
- 20GB hard drive<sup>4</sup>
- Ultrabay™ Enhanced CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength<sup>12</sup>
- 1-yr system/battery limited warranty<sup>6</sup>

NavCode 28832XU-M419

THINK EXPRESS MODEL PRICED AT:

**\$1299\***

ServicePac® Service Upgrade:<sup>7</sup>

3-yr Depot Repair #30L9192 **\$132**

### IBM ThinkPad X40

Our thinnest and lightest

#### Distinctive IBM Innovations:

- IBM Embedded Security System 2.0 – Strongest security as a standard feature
- NEW! IBM Rescue and Recovery™ with Rapid Restore™ – One-button recovery and restore solution

#### System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor ULV 1GHz
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM
- 20GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM full-size keyboard<sup>8</sup>
- Only .94" thin<sup>11</sup>
- 2.7-lb travel weight<sup>10</sup>
- 1-yr system/battery limited warranty<sup>6</sup>

NavCode 23861CU-M419

THINK EXPRESS MODEL PRICED AT:

**\$1499**

objectives and are not guarantees. Calls must be received by 5pm local time in order to qualify for Next Business Day service. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. **(8) Full-size keyboard:** As defined by ISO/IEC 15412. **(10) Travel weight:** includes battery and optional travel bezel instead of standard optical drive in Ultrabay bay, if applicable; weight may vary due to vendor components, manufacturing process and options. **(11) Thinness:** may vary at certain points on the system. **(12) Wireless capability:** requires compatible wireless-enabled options, sold separately. **(13) Embedded Security Subsystem:** requires software download. **Trademarks:** The following are trademarks or registered trademarks of IBM Corporation: IBM, the IBM logo, Rapid Restore, Rescue and Recovery, ThinkPad, Ultrabay, UltraConnect and UltraNav. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Intel SpeedStep and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of other companies. © 2004 IBM Corporation. All rights reserved.

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Take a look at some of our latest models. And get state-of-the-art security.



#### Why IBM ThinkPad Notebooks?

To make IBM ThinkPad® notebooks even more valuable, each one featured here can give you the efficiency, productivity and edge you need and comes with all the following ThinkVantage™ Technologies:

#### IBM Active Protection System:

Butterfingers unite! IBM ThinkPad notebooks now include airbag-like technology to help protect your hard drive from some damage caused by drops and jolts (select models).

#### NEW! Rescue and Recovery with Rapid Restore:

Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

#### Access Connections:

Switch between wired and wireless connections.

#### Embedded Security Subsystem 2.0:<sup>1</sup>

Hackers and thieves, beware. Our combined hardware and software solution is designed to protect user data and keep it private.

#### Access IBM:

Get the help you need, when you need it. One button on your ThinkPad notebook brings you a world of resources and assistance.

#### IBM ThinkPad R51

##### System Features:

- Intel® Centrino™ Mobile Technology
  - Intel Pentium® M Processor 1.50GHz
  - Intel PRO/Wireless Network Connection 802.11b<sup>3</sup>
- Microsoft Windows XP Professional<sup>4</sup>
- 15" SXGA+ TFT display (1400x1050)
- 256MB DDR SDRAM<sup>5</sup>
- 40GB hard drive<sup>6</sup>
- Integrated Ethernet and modem
- IBM Ultrabay™ Enhanced CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength<sup>16</sup>
- 1-yr system/battery limited warranty<sup>7</sup>

NavCode 1836BDU-M419

THINK EXPRESS MODEL  
PRICED AT:

**\$1499\***

With Microsoft Office Small Business Edition 2003:<sup>8</sup> \$1,739



#### IBM ThinkPad T42

##### System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor 1.50GHz
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 14.1" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500
- 256MB DDR SDRAM
- 30GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim DVD-ROM
- IBM UltraConnect Antenna for increased signal strength
- Only 1" thin,<sup>10</sup> 4.5-lb travel weight<sup>4</sup>
- 1-yr system/battery limited warranty<sup>7</sup>

NavCode 2378DTU-M419

THINK EXPRESS MODEL  
PRICED AT:

**\$1,549**

With Microsoft Office Small Business Edition 2003: \$1,889

ServicePac® Service Upgrade:<sup>11</sup>  
2-yr Onsite Repair/9x5/Next Business Day Response #30L9189 **\$197**

#### IBM ThinkPad T42

##### System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor 735 (1.70GHz)
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 14.1" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim CD-RW/DVD-ROM combo
- IBM UltraConnect Antenna for increased signal strength
- 1-yr system/battery limited warranty<sup>7</sup>

NavCode 2378FTU-M419

THINK EXPRESS MODEL  
PRICED AT:

**\$1,749**

With Microsoft Office Small Business Edition 2003: \$1,989

ServicePac Service Upgrade:  
4-yr Depot Repair #69P9195 **\$249**



#### IBM ThinkPad T42

##### System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor ULV 1.5GHz
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 15" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- Ultrabay Slim CD-RW/DVD-ROM Combo
- Only 1" thin, 4.5-lb travel weight
- 1-yr system/battery limited warranty<sup>7</sup>

NavCode 2378DWU-M419

THINK EXPRESS MODEL  
PRICED AT:

**\$1,649**

With Microsoft Office Small Business Edition 2003: \$1,889

ServicePac Service Upgrade:  
3-yr Depot Repair  
#30L9192 **\$132**

#### IBM ThinkPad T42

##### System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor 735 (1.70GHz)
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 15" SXGA+ XGA+ TFT display (1400x1050)
- 64MB ATI Mobility RADEON 9600 graphics
- 512MB DDR SDRAM
- 60GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim CD-RW/DVD-ROM combo
- IBM UltraConnect Antenna for increased signal strength
- 3-yr system/1-yr battery limited warranty<sup>7</sup>

NavCode 2379DXU-M419

THINK EXPRESS MODEL  
PRICED AT:

**\$2,399**

ServicePac Service Upgrade:  
3-yr Onsite Repair/9x5/Next Business Day Response #30L9195 **\$243**



#### IBM ThinkPad X40

##### IBM ThinkVantage Technologies:

- Longest standard battery life of any leading-brand notebook<sup>13</sup>

##### System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor LV 1.20GHz
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- Intel Extreme Graphics 2
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM fullsize keyboard<sup>12</sup>
- 7.5hr Li-Ion battery<sup>17</sup>
- 1-yr system/battery limited warranty<sup>7</sup>

NavCode 23866GU-M419

THINK EXPRESS MODEL  
PRICED AT:

**\$1,749**

ServicePac Service Upgrade:

3-yr Onsite Repair/9x5/Next Business Day Response #30L9195 **\$243**

#### IBM ThinkPad X40 Solution Pack

##### IBM ThinkVantage Technologies:

- Longest standard battery life of any leading-brand notebook

##### System Features:

- Intel Centrino Mobile Technology
  - Intel Pentium M Processor LV 1.20GHz
  - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- 7.5-hr Li-Ion battery
- 3-yr system/1-yr battery limited warranty<sup>7</sup>

##### Accessories Included:

- ThinkPad X4 UltraBase Dock
- IBM Ultrabay Slim CD-RW/DVD-ROM combo

NavCode 23826UU-M419

THINK EXPRESS MODEL  
PRICED AT:

**\$2,199**

ServicePac Service Upgrade:  
5-yr Onsite Repair/9x5/Next Business Day Response #69P9200 **\$449**

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## IBM recommends Microsoft® Windows® XP Professional.



(Monitor not included)



(Monitor not included)



(Monitor not included)

### Why IBM ThinkCentre PCs?

Only IBM offers these features to protect your users, connect them, and keep them working. Each ThinkCentre™ desktop featured here can give them the efficiency, productivity and edge they need with the following ThinkVantage Technologies:

### NEW! Rescue and Recovery with Rapid Restore:

Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

### Access IBM:

Get the help you need, when you need it. One button on your ThinkCentre desktop brings you a world of resources and assistance.

### ImageUltra™ Builder:

Need to roll out new systems? Image and copy your operating system across your network in a flash. (Order separately)

### NEW! IBM ThinkCentre A50

#### System Features:

- Intel® Pentium® 4 Processor 520 with HT Technology
- Processor speed 2.80GHz
- 800MHz FSB
- Microsoft Windows XP Professional
- 256MB DDR PC3200<sup>5</sup>
- 40GB hard drive • CD-RW
- Integrated 10/100 Ethernet
- Norton AntiVirus™ with 90 days of virus definition updates
- Lotus® SmartSuite® Millennium license
- 1-yr parts/1-yr limited onsite service limited warranty<sup>14</sup>

NavCode 814812U-M419

THINK EXPRESS MODEL  
PRICED AT:

**\$699**

### IBM ThinkCentre A50

#### System Features:

- Intel Pentium 4 Processor with HT Technology 2.80GHz
- Microsoft Windows XP Professional
- 62% smaller than a standard desktop
- 256MB DDR PC2700
- 40GB hard drive • CD-ROM
- Integrated 10/100 Ethernet
- Norton AntiVirus with 90 days of virus definition updates
- Lotus SmartSuite Millennium license
- 3-yr parts limited warranty with 1-yr limited onsite service<sup>14</sup>

NavCode 841933U-M419

THINK EXPRESS MODEL  
PRICED AT:

**\$749**

#### ServicePac Service Upgrade:

4-yr Onsite Repair/9x5/Next Business Day Response #69P9158 **\$198**

### NEW! IBM ThinkCentre A50

#### System Features:

- Intel Pentium 4 Processor 530 with HT Technology
- Processor speed 3.0GHz
- 800MHz FSB
- Microsoft Windows XP Professional
- 256MB DDR PC3200
- 40GB hard drive • CD-ROM
- Norton AntiVirus with 90 days of virus definition updates
- Integrated 10/100 Ethernet
- Lotus SmartSuite Millennium license
- 3-yr limited warranty with limited onsite service<sup>14</sup>

NavCode 814721U-M419

THINK EXPRESS MODEL  
PRICED AT:

**\$899**

### IBM ThinkCentre S50

#### System Features:

- Intel Pentium 4 Processor with HT Technology 2.80GHz
- Microsoft Windows XP Professional
- 62% smaller than a standard desktop
- 512MB DDR PC2700
- 40GB hard drive • CD-ROM
- Norton AntiVirus with 90 days of virus definition updates
- Gigabit Ethernet-integrated
- 3-yr limited warranty with limited onsite service<sup>14</sup>

NavCode 818336U-M419

**\$1079**

With Microsoft Office Small Business Edition 2003: \$1,319

ServicePac Service Upgrade:  
4-yr Onsite/9x5/4-hr Response  
#69P9162 **\$250**

### IBM ThinkCentre M50

#### System Features:

- Intel Pentium 4 Processor with HT Technology 2.80GHz
- Microsoft Windows XP Professional
- 512MB DDR PC2700
- 40GB hard drive • CD-ROM
- Intel Extreme Graphics 2
- Gigabit Ethernet-integrated
- 3-yr limited warranty with limited onsite service<sup>14</sup>

NavCode 8187EJU-M419

**\$1049**

With Microsoft Office Small Business Edition 2003: \$1,288

ServicePac Service Upgrade:  
3-yr Onsite/9x5/4-hr Response  
#41L2734 **\$129**



### IBM ThinkExpress Program:

We've designed and priced many of our products specifically for small and medium businesses. And best of all, they're available direct from IBM or through select IBM Business Partners.

### IBM ThinkPad Accessories

Belkin Components Universal Notebook Travel Surge Protector  
#22P7127 **\$20**

Targus Deluxe Mobile Essentials Kit  
#22P7437 **\$60**

ThinkPad Carrying Case® - Leather Attache  
#73P3600 **\$129**

ThinkPad 72W AC/DC Combo Adapter  
#22P9010 **\$99**

ThinkPad Port Replicator II  
#74P6733 **\$179**

### IBM ThinkCentre Accessories

IBM 128MB USB 2.0 High-Speed Memory Key  
#22P9229 **\$59**

Lexmark X5270 All-in-One Printer  
#22P8808 **\$140**

IBM ThinkVision™ L150 15" Flat Panel Monitor with system purchase  
#W9SPAB1 **\$379**



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due to vendor components, manufacturing process and options. (10) **Thinness:** may vary at certain points on the system. (11) **ServicePac services:** are available for machines normally used for business, professional or trade purposes, rather than personal, family or household purposes. Service period begins with the equipment date of purchase. Service levels are response-time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. Calls must be received by 5pm local time in order to qualify for Next Business Day Service. (12) **Full-size keyboard:** As defined by ISO/IEC 15412. (13) **Battery life:** Based on manufacturer's published figures or CNET.com results for the top 5 vendors in 2003 notebook sales based on IDC data, as of 1/29/2004. (14) **Systems with limited onsite service:** are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by IBM. IBM will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by IBM for onsite replacement. For a list of onsite replaceable parts, contact IBM. Support unrelated to a warranty issue may be subject to additional charges. (15) **Certain IBM logo products:** are not manufactured, warranted or supported by IBM; IBM logos and trademarks used under license. Contact IBM for details. (16) **Wireless capability:** requires compatible wireless-enabled options, sold separately. (17) **Battery:** These model numbers achieved the Ziff Davis Media, Inc.'s Business Winstone™ 2002 BatteryMark™ Version 1.0 Battery Run-down Time of at least the time shown. This test was performed without independent verification by the VeriTest testing division of Lionbridge Technologies, Inc. ("VeriTest") or Ziff Davis Media, Inc.; neither Ziff Davis Media, Inc., nor VeriTest makes any representations or warranties as to these test results. Winstone is a registered trademark and BatteryMark is a trademark of Ziff Davis Publishing Holdings, Inc., in the U.S. and other countries. A description of the environment under which the test was performed is available at [ibm.com/pc/www/thinkpad/batterylife](http://ibm.com/pc/www/thinkpad/batterylife). Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning and other customer preferences. **Trademarks:** The following are trademarks or registered trademarks of IBM Corporation: IBM, the IBM logo, ImageUltra, Lotus, NavCode, Rapid Restore, Rescue and Recovery, SmartSuite, ThinkCentre, ThinkPad, ThinkVantage, ThinkVision, UltraConnect, UltraBase, Ultrabay and UltraNav. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Intel SpeedStep and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of other companies. © 2004 IBM Corporation. All rights reserved.

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## COVER STORY

## Clean Up Your PC

### 56 Stop The Decline

In this month's feature package, we tell you how to slow down your computer's aging process. Once you understand the common causes of PC aging, you'll know what pitfalls to avoid and what techniques and tools will help you extend your PC's life.

### 58 Virus Vice Squad

Nowadays, the first line of defense you'd better set up for your computer is antivirus software. Viruses, worms, Trojan horses, and other types of malicious code can cause all types of problems, so it's best if you find a way to keep them off your system in the first place. Then, once you find and install software you like, be vigilant about keeping it up-to-date.

### 62 Get Rid Of The Gunk

Just as a messy house makes it hard to stay organized and function from day to day, a cluttered hard drive makes it hard for your system to be efficient and perform well. Drive errors, storage inefficiencies, lengthy startups, and slow file retrievals all become apparent over time on any system suffering from neglect. We tell you how to overcome these problems and keep your hard drive clean.

### 65 Wring Out The Registry

The Registry, Windows' database of system settings and user preferences, is where applications often leave behind old data—even when you try to properly uninstall their files. Because of this, cleaning and configuring the Registry also must be part of your cleansing ritual as you strive for better PC performance.

### 68 Online Tool Time

Chance are good (very good) that your computer didn't come stocked with every tool you need to make the most of your online time. Regardless of whether you're looking for a download manager, pop-up blocker, adware/spyware remover, auction sniper, newsreader, or password keeper, we're sure we have a program or two (or three or four) that's right for you.

### 72 Maintenance & Customization

Computer users who want a PC that's in tip-top shape better be prepared to follow a strict maintenance schedule. And, to become even more efficient, these same users should learn how to customize their system's settings according to their preferences. We tell you how to take advantage of bundled Windows utilities and third-party utilities to accomplish such goals.

## Reviews

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#### A Photographic Pairing

Sandy Berger researches all manner of computer products and presents a pairing that will help you make the most of the available technology.

### 14 Tech Diaries

Our *Smart Computing* columnists spent some quality time with computer and computer-related hardware to get beyond the benchmark scores, statistics, and marketing hype. Find out what they liked and disliked about their choices inside.

### 20 You've Got Mail

The email client that came bundled with your OS (operating system) may get you by, but you certainly aren't tethered to it for life. There are bigger and better things out there. Read on to see if one of them is for you.

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### 26 Impulse Items

Each month, we take a look at several useful gadgets and programs you can get for \$20 or less.





## PC Operating Instructions

### 28 Get A Fresh Start



Maybe you've been plagued by a virus or your PC is mired in a years-old collection of files and applications. In either case, it might be time to wipe the slate clean by reinstalling WinXP.

### 30 Update Device Drivers In Windows Me



A new device driver can work wonders for your PC, but finding and installing one can sometimes prove a tad tricky. We'll provide solutions for common problems you might encounter while updating a driver.

## General Computing

### 32 How Did They Do That? Haptics Make It Happen

Haptics provides a tactile dimension to computer applications, in everything from joysticks to cell phones. Read on to learn how this technology can improve your experience.

### 34 This Isn't Your Father's Scanner

Scanners do a lot more than it may seem at first glance. Learn how to get the most from this versatile peripheral.

## Plugged In

### 37 Mr. Modem's Desktop: Gypsies, Beefs & Peeves

In which Mr. Modem, author of several books—none of which has won the Pulitzer Prize—and co-host of the weekly "PC Chat" radio show, goes over the results of his "e-nnoyances" survey.

### 38 Site Guide: Eye On Books Is A Literary Bonanza For Your Ears

Welcome to bookworm heaven. The Eye on Books site is home to more than 900 audio interviews with writers who discuss their latest books, the art of writing, where they find sources of inspiration, how they develop characters, and much more.

### 42 Cut The Ties That Bind

Remote Internet access is the wave of the future, and with the next generation of hardware and services, it's becoming a viable option.

### 45 World Wide Watchdog

You can use a Web cam to keep a digital eye on your home or office, but it's not as easy as the ads might have you believe. We show you how.

### 48 Email Headers

Many of us have wondered what various email headers mean, and this is especially true now that spammers have found ways to manipulate what we see in email headers. We delve into this topic and tell you what we found out.

## PC Project

### 76 Ward Off The Warmth

Replacing your factory-issued heatsink is an easy process that can reap big performance benefits and more efficiently cool your system. Learn how simple this upgrade can be.

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Computer expert and resident paranoid Alan Luber helps you avoid PC disasters.

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You have questions. We have answers. The *Smart Computing* staff responds to your queries.

### 107 Action Editor

Can't seem to get a response from a vendor or manufacturer? If you need help, we're here for you.

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Control Your PC From Afar With RealVNC

### 85 Quick Tips

## SmartComputing.com

### 88 SmartComputing.com: My Personal Library

Wish you had one customized location to address all your computing questions, problems, and/or interests? Look no further. Check out My Personal Library. Access your own personal library at any time from any of our sites.

## Tidbits

### 94 Display Goes Digital

The latest and greatest in monitors is digital display. We'll explain how this technology works and how it differs from its analog predecessor.

## Editor's Note

I'm not very good at keeping my home office clean. I have boxes of software arrayed—well, disarrayed—all over the room, most of which I'm supposed to be "testing." Stacks of books, magazines, and reams of yellowing paper—research materials from various writing projects—litter the place. On various desks (or other conveniently flat surfaces), I have three computers that actually work, plus various and sundry parts strewn about from computers that might *eventually* work.

Add to this clutter several guitars, a television, and an assortment of electronic testing tools, and you can see the problem: The room is inefficient at best and dangerous at worst; everything I need is there, but who could possibly find it? And if I could find it, could I use it without knocking over something else or tripping over a large stuffed rabbit and possibly breaking a leg? (Please don't ask me why I have a large stuffed rabbit in my office.)

You may or may not have a room that looks like this, but I'll bet that many of you do have computers that look like this. They contain years' of detritus, digital debris from hundreds (maybe thousands) of installations and uninstallations, programs you've forgotten you even had, and files you've long lost track of. ("Oh, so that's where that went!") In addition, your computers are probably also host to dozens of "helpful" little applications that suck up resources and slow down your system.

Wouldn't it be great if you had some sort of "maid service" for your computer? Somebody who'd go in there and mop, sweep, dust, and . . . well, just generally clean things up? Lucky you. You have exactly that, in the form of several utilities that we'll describe in this issue. The tools to help you keep your system operating at its best are out there—some free, some not—and this issue focuses on helping you decide which ones you need.

Now, if only there were something like that for my office.



ROD SCHER, PUBLICATION EDITOR

## Now Available On Newsstands . . .



### Computer Power User • The Next Big Tech Breakthroughs

Today's developments in technology were sci-fi a century ago. Today, there are many new developments that will forever change computers and technology—we're here to show you the most influential. You'll also get insight into getting rid of your long distance for cheaper phone rates and learn about Flash-based sites that do much more than advertise.



### PC Today • Get To Know Windows XP

Whether you're new to Windows XP or you've had it for a while and want to learn more, this month's *PC Today* tells you how to customize it, make it secure for the Internet, and transfer files from an older PC.



### CE Tips • Home Theater How-Tos

This month, *CE Tips* offers 22 pages packed with home-theater information, including helpful setup, use, and troubleshooting tips. Get your home theater shipshape just in time to beat the late-summer heat.



### Reference Series • PC Modder

It's baaa-ack. The latest edition of *PC Modder* is packed with dozens of new CPU and graphics card benchmark case studies. Get all the information you need on the hottest cards and chips for your PC. Oh, and our friend the Mad Modder is back, too. This time he decides to experiment with dry ice.

### Corrections/Clarifications

In the August issue's "Impulse Items" article (pg. 25), we printed the wrong Web address for the Fritz GrandMaster Challenge. The correct URL is <http://www.viva-media.com>.

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Compiled by Christian Perry



# Wily Worm Goes Mobile

A few years ago, a hoax circulated among email users warning that a new virus was infecting mobile phones. According to the message, the virus erased all crucial data from infected phones and rendered them unusable. The antivirus community caught on pretty quickly to the ruse, but experts agreed at the time that a mobile virus could technically appear one day. Apparently, today is the day.

Moscow-based Kaspersky Labs recently announced that a proof-of-concept mobile worm called Cabir now exists that can enter Symbian-based mobile phones using Series 60 software when users download a game. Once inside a phone, Cabir can spread to other phones via Bluetooth technology. The worm travels to other phones disguised as a security file, and when it arrives,

the user simply needs to accept the transmission of the file (called Caribe.sis) to start the automatic installation. Whenever the phone is turned on afterward, the worm activates and looks for other phones to victimize.

According to Kaspersky, a group of virus writers, called 29a, from the Czech Republic and Slovakia created the worm. 29a is the same group responsible for the first virus for Microsoft's .NET, the first Win64 virus, and the first virus for additional NTFS (NT file system) streams. Although the worm is proven to work, it's not considered inherently dangerous because it doesn't damage files on phones, and in order to spread, it must find nearby Symbian/Series 60 phones that are on and discoverable and have Bluetooth enabled.

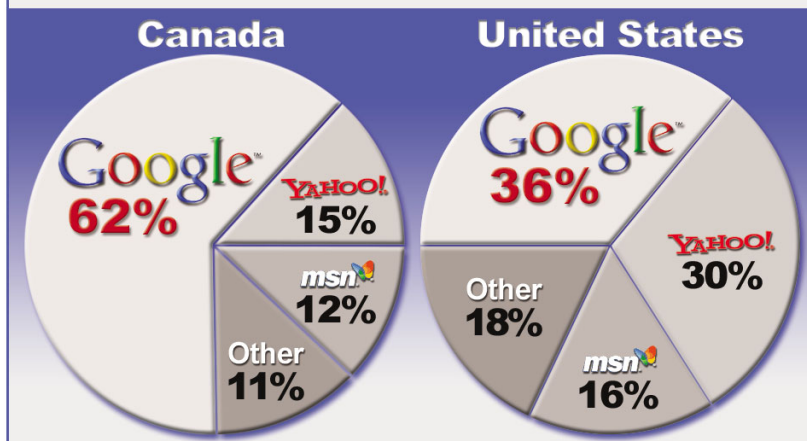
In November 2003, a report in *The New York Times* estimated that malicious attacks on mobile phones could cause as much as \$471 million in damages for every 5 million users affected by mobile viruses. Service providers are aware of the potential threat, but blocking traffic that might contain viruses is a trickier practice than running antivirus protection on PCs. In any case, antivirus programs are already being developed for mobile handsets and are likely to appear first in Asia, which is heavily populated with users of Internet-enabled phones.

## Canadians Outsearch U.S. Counterparts & Prefer Google

According to a recent study by comScore Networks, Canadian residents more actively use search engines than U.S. residents. The study revealed that 85% of Canadian Internet users conduct at least one search on a major engine each month, compared to 73% of the U.S. population. Canadians also search more often than Americans, averaging 40 searches per month compared to 35 searches per month for U.S. residents.

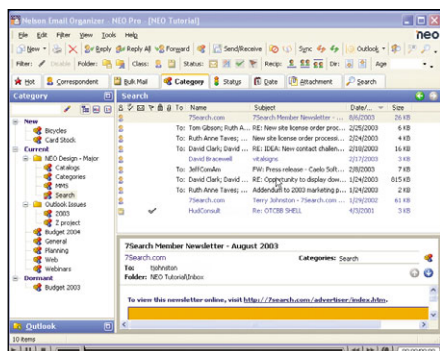
### Great White Google

The comScore Networks study also showed that Canadians prefer Google by a large margin over other major search engines. Here's a look at what Internet users in Canada and the United States use for their Internet searches.



Illustrations: Lori Garris

## Tame Outlook With NEO Pro



If you receive only a few email messages each day, managing your messages in Outlook is a breeze. But if you're bombarded with more email than you can regularly organize, your inbox probably looks like a war zone. If this describes you, Nelson's NEO Pro 3.0 email organizer (\$69.95; <http://www.emailorganizer.com>) might just be your savior.

Using a system of unified message stores, NEO Pro organizes messages so that you have easy access to your email regardless

of where it resides in Outlook. (The product does not currently work with Outlook Express.) For example, if you have messages from one contact bundled together in a folder on the program's Correspondent tab, they can actually reside in different message stores but still appear in folders in the Correspondent section.

You also can use NEO Pro's Category tab to organize messages by category (and even assign more than one category to each message), and the messages will still actually reside in their message stores. With organization this easy, that sinking feeling you get each time you open Outlook might just disappear for good.

## Keep In Touch Remotely

If you travel often and need remote access to either your home or work computer, you're probably familiar with remote access services, such as Citrix's GoToMyPC, that let you access your computer from anywhere using a Web interface. You also probably know that they're not cheap, but 01 Communique now offers a solution that's both effective *and* affordable: I'm InTouch.

The I'm InTouch service establishes an SSL (Secure Sockets Layer) 128-bit encrypted connection between your PC and your remote device (whether it's another PC, a handheld device, or

a mobile phone), requiring a simple logon procedure at the service's Web site to begin the communication. After your computer registers with the I'm InTouch Sign-Up Server, the server leaves the picture, resulting in a pure peer-to-peer connection between the two computers.

Many users report consistently reliable connections with I'm InTouch, with speeds that rival or surpass competitors, as well as providing flexibility with different devices. Best of all, the service costs only \$99.95 per year, which includes unlimited usage, tech support, and any upgrades.

## R E V I E W

### This Alcohol Burns

We have plenty of choices today when it comes to CD- and DVD-burning software, so choosing the right tool often depends on what you burn and how you burn it. Alcohol Software's Alcohol 120% offers a nice mix of features that combine to form an all-in-one burning solution that excels in many areas.

For starters, copying discs using Alcohol's Copy Wizard is an experience that's tough to find with competing software. You can select from a horde of data type presets, including audio CD, video

CD (including VCDs with bad sectors), SecuROM, SafeDisc, PlayStation, PlayStation 2, karaoke, and others. You'll also like Alcohol's ability to burn CD images; in our tests, it had no trouble handling all types of image files (even Nero image

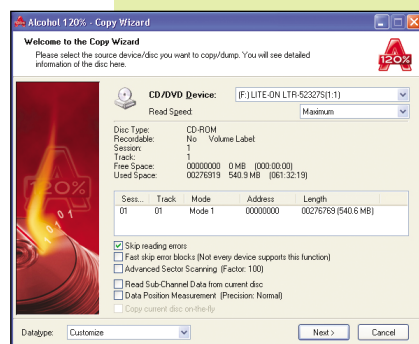
files). With this compatibility, you can easily use Alcohol 120% as your primary burning software.

Alcohol also lets you mount images as virtual drives so you can use CDs and DVDs directly from your hard drive without accessing the actual disc. In fact, you can create up to a whopping 31 virtual drives to completely blow away speeds you'd be getting if you were still using the disc-based image in your CD or DVD drive. Creating these virtual drives requires only a few clicks, and Alcohol gives you full power to set drive parameters and modify drive letters so that the virtual drives don't interfere with your regular drive letters.

The burning wizards in Alcohol 120% aren't quite as dumbed-down as wizards you'll find in Nero and Easy Media Creator, but this is a good thing. We appreciate seeing easy access to burning options that could easily be overlooked in other burning software if you didn't know they were available to begin with. As for the actual burning, Alcohol 120% performs admirably, churning out discs quickly and error-free nearly all of the time.

#### Alcohol 120%

\$49.95 • Alcohol Software  
<http://www.alcohol-software.com>



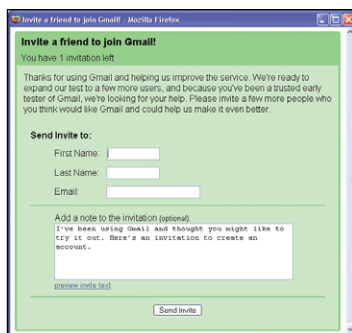


## Gmail Spawns Global Email Frenzy

When Google announced its free Gmail email service back in March, word spread rapidly across the Internet, mostly thanks to the service's whopping 1GB of storage for each account. Since then, Gmail continues to thrive in its testing state, with Google doling out invitations to existing Gmail testers, who in turn give away, sell, or trade the invitations. Because the service is still in beta mode (as of press time) and not readily available to the general public, a worldwide frenzy to nab an early account has spawned an impressive selection of methods used to get Gmail.

Gmail invitations appeared by the hundreds on eBay, with some selling for as high as \$150 each—a price some buyers consider well worth the username of their choice. People selling invitations also flooded message boards, though as Google became more generous with invitations for current testers, many Gmail account owners started simply giving them away to lucky board members.

At gmail swap (<http://www.gmailswap.com>), people could upload written pleas for Gmail accounts, offering goods, services, or just about anything else for a coveted Gmail address. Some swappers, such as Alexander Cianfrocco, a litigation technology specialist with a national law firm, figured he could dupe a random male user of gmail swap by pretending to be a female and offering pictures of his dogs in



exchange for a Gmail account. Cianfrocco used "lots of exclamation points and happy faces" to con his way to an invitation.

"With Gmail accounts pulling \$50 a pop, I didn't think sending out some doggy pictures and acting like a girl was such a bad way to get one," says Cianfrocco (aka "Heather").

Even as invitations grow more common as Gmail nears its public release, Gmail owners don't hesitate to both show their appreciation for the technology and proudly proclaim their fortune. Jay Hunter, a senior network engineer with the Fannie Mae Foundation, explained that he's as happy to use Gmail as he is to actually own an account.

"I like the cleanliness of my inbox, I haven't received any spam, and I can archive items I want to keep without having to worry about losing them," Hunter says. "And like my signature says, 'I have Gmail and you don't.'"

## R E V I E W

### Laudable Laser

Inkjet printers can churn out spectacular photo prints, but if your projects are text-heavy, your best bet is an affordable laser printer that can deliver sharp text at a low per-page cost. Some low-cost home and small-office laser printers tend to feature cheap builds and even less impressive print stats, but we were pleasantly surprised with Lexmark's E232t laser printer, which offers steady production at a decent price.

The \$299 E232t features a 200MHz processor, 16MB of memory, a 600 x 600 dpi (dots per inch) resolution, and a huge 550-sheet extension drawer that sits beneath another 250-sheet drawer. The printer can handle a wealth of media types, including card stock, envelopes, and transparencies, and the 2,500-page toner cartridge means you'll be able to print a heck of a lot of pages before buying a new cartridge (of course, the printer ships with only a puny 1,500-page starter cartridge). To buy a 2,500-page toner cartridge, the cost is \$94 (or \$74 if you use



Lexmark's Toner Cartridge Return Program). Connections for the E232t include both USB (Universal Serial Bus) 2.0 and bidirectional parallel.

The E232t has a monthly duty cycle of 10,000 pages, and its text quality is reasonably sharp. Lexmark claims a print speed of up to 22ppm (pages per minute), but in nearly every one of our text-based tests, the E232t pushed 23ppm. The company also lists the time to print the first page at less than 8.5 seconds, and the E232t usually popped out the first page in about five seconds, especially with smaller print jobs.

With a reasonably small footprint, decent speed, and sharp output, Lexmark's E232t will fit in well in a home or small-office environment.

#### E232t

\$299 • Lexmark International  
(800) 539-6275  
<http://www.lexmark.com>

#### Duly Quoted

"It's all about giving people the freedom to get online when and where they want—and this technology demonstrates that with a bit of imagination, you can do just that."

—Tim Hatch, Intel's consumer marketing manager, describes the motivation behind a new Intel-powered, Wi-Fi-enabled surfboard, complete with a built-in notebook, solar panels, and a video camera. (Source: BBC News)

## New Products

Compiled by Kylee Dickey

Quick takes on the latest hardware and software to hit the market at press time. Manufacturers' and publishers' release dates are subject to change, so some of the products may not be available when you read this.

## Hardware

### 128MB EZ-Disk

EZQuest • \$49

*Portable Hi-Speed USB 2.0 flash drive that weighs just 4 grams*

(714) 694-0031

<http://www.ezq.com>

### 6-in-1 PC Card Adapter

SanDisk • \$29.99

*Connect MMC, MS, MS Pro, SD, SM, and xD cards to your notebook with this adapter*

### Wireless To Go

Until recently, WAPs (wireless access points) weren't very portable. If you set up a WAP in your home or business, you didn't take it with you when you went to an acquaintance's house or when you stayed at a hotel. However, Apple's AirPort Express is a WAP designed for portability. It is compatible with both Macs and PCs, measures just 3.7 inches high x 2.95 inches wide x 1.12 inches deep, and plugs directly into a wall outlet. AirPort Express has built-in 10/100Base-T Ethernet, USB (Universal Serial Bus), and audio ports for creating a wireless network, sharing a USB printer wirelessly, or listening to music. In addition to using AirPort Express as a basic WAP or server, you also can use it together with Apple's iTunes software to stream music wirelessly from a computer to your home stereo (\$129; 800/692-7753; 408/996-1010; <http://www.apple.com>). ■

(866) 726-3475; (408) 542-0500  
<http://www.sandisk.com>

### CityGear New York Notebook Case (#TCG400)

Targus • \$59.99

*Carry a notebook with a screen as large as 15.4 inches in this case*

(877) 482-7487; (714) 765-5555

<http://www.targus.com>

### DIGA DMR-E95H

Panasonic • \$899.99

*DVD recorder with a 160GB hard drive and a TV Guide On-Screen Electronic Program Guide*

(800) 211-7262; (201) 348-7000

<http://www.panasonic.com>

### DRU-540A

Sony • \$179.99

*Burn DVDs at speeds up to 12X (DVD+R), 8X (DVD-R), or 4X (DVD+/-RW)*

(800) 571-7669; (201) 930-1000

<http://www.sonymstyle.com>

### Dual 1.8GHz Power Mac G5

Apple • \$1,999

*Dual-processor system with NVIDIA GeForceFX 5200 Ultra graphics*

(800) 692-7753; (408) 996-1010

<http://www.apple.com>

### E232t

Lexmark • \$299

*22ppm laser printer with 800-sheet input capacity*

(800) 539-6275; (859) 232-2000

<http://www.lexmark.com>

### GPS 18

Garmin • \$162.49

*Use your notebook PC as a GPS device*



*by installing the GPS 18 and bundled nRoute software*

(800) 800-1020; (913) 397-8200

<http://www.garmin.com>

### Indi DVD Multiformat (AID+1280)

TDK • \$179.99

*An internal DVD drive with speeds of 12X (DVD+R), 8X (DVD-R), 4X (DVD+RW), and 4X (DVD-RW)*

(516) 535-2600

<http://www.tdk.com>

### N1300

ViewSonic • \$499

*13-inch LCD TV with swivel table stand and cabinet mount kit*

(800) 888-8583; (909) 869-7976

<http://www.viewsonic.com>

### PowerShot S60

Canon • \$499.99

*5MP (megapixel) compact digital camera with wide-angle lens and 3.6X optical zoom*

(800) 652-2666; (949) 753-4000

<http://www.powershot.com>

### Verto 6800 Ultra

PNY Technologies • \$499.99

*Video card with integrated NVIDIA GeForce 6800 GPU*

(973) 515-9700

<http://www.pny.com>

# Software

## AccountEdge 2004 Network Edition

MYOB • \$399

Handle your finances on a Mac  
(800) 322-6962; (973) 586-2200  
<http://www.myob.com>

## Art Explosion Publisher Pro

Nova Development • \$99.95

Create a variety of projects, such as brochures, greeting cards, CD labels, and newsletters  
(818) 591-9600  
<http://www.novadevelopment.com>

## The Blobs

Tool Factory • \$39.95

Educational games for 3- to 5-year-old children  
(800) 220-8386  
<http://www.toolfactory.com>

## Cook'n Low Carb

DVO Enterprises • \$29.95

Over 1,500 low-carb recipes and a four-week meal plan on CD-ROM  
(888) 462-6656; (801) 492-1290  
<http://www.dvo.com>

## Dragon Burn 4.0

NTI (NewTech Infosystems) • \$49.95

DVD-burning software for Mac OS X  
(949) 421-0720  
<http://www.ntius.com>

## Finale PrintMusic!

MakeMusic! • \$69.95

Music composition software with up to 24 staves, lyric capabilities, chord symbols, and guitar fretboards  
(800) 843-2066; (952) 937-9611  
<http://www.makemusic.com>

## Internet Cleanup 4.0

Aladdin Systems • \$29.99

Stops spyware and prevents identity theft  
(800) 732-8881; (831) 761-6200  
<http://www.aladdinsys.com>

## iTube 1.1

East Bay Technologies • \$24

## Complete Video-Editing Package

Adobe has several popular programs for video creation and editing. For those serious about video editing, Adobe now bundles several of its most popular applications in one package: Adobe Video Collection 2.5 Standard. This software group includes Adobe Premiere Pro 1.5 for video editing, Adobe After Effects 6.5 Standard for special effects, Adobe Audition 1.5 for audio mixing and editing, and Adobe Encore DVD 1.5 for designing and burning DVDs. At \$999, the price of this software suite may seem high, but purchasing all four programs individually would cost \$2,246, and that's why Adobe Video Collection is such a great bargain (\$999; 800/833-6687; 408/536-6000; <http://www.adobe.com>). ■

Watch Internet TV on a Mac

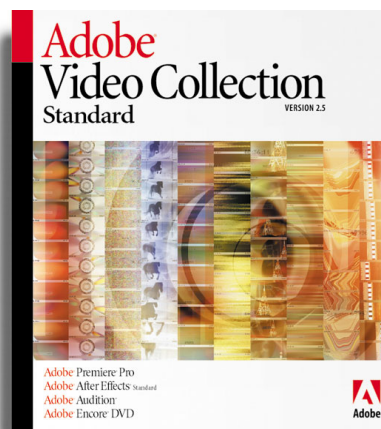
(925) 251-9612

<http://www.eastbaytech.com>

## Meeting Manager Standard 5.0

CyberMatrix • \$100

Schedule meetings, book meeting rooms, and ensure that groups stay within the meeting place's maximum capacity  
(888) 664-0383; (403) 258-0585  
<http://www.cyber-matrix.com>



Adobe Video Collection 2.5 Standard

## NEO (Nelson Email Organizer) Pro 3

Caelo Software • \$69.95

Microsoft Outlook plug-in that sorts email according to user-defined preferences  
(250) 354-5580  
<http://www.emailorganizer.com>

## Norton PartitionMagic 8.0

Symantec • \$69.95

Create, resize, or merge partitions  
(800) 441-7234; (408) 253-9600  
<http://www.symantec.com>

## PhatNet Personal Edition

PhatWare • \$99

Decode, filter, and monitor data over a network on a Windows Mobile-based Pocket PC  
(650) 559-5600  
<http://www.phatware.com>

## PrintMaster Platinum 16

Broderbund • \$39.99

Create and print documents using a collection of templates  
(800) 395-0277; (319) 247-3325  
<http://www.broderbund.com>

## Staff Files 4.0

ABS (Atlas Business Solutions) • \$295

(single-user license)  
Track employees' wages, benefits, sick leave, evaluations, and more  
(800) 874-8801; (701) 235-5226  
<http://www.abs-usa.com>

## WinDVD 6 Platinum

InterVideo • \$69.95

Watch DVDs and VCDs, listen to CDs, and watch video files  
(510) 651-0888  
<http://www.intervideo.com>

## WordPerfect OfficeReady Home Essentials Solution Pack

Corel • \$29.95

A variety of WordPerfect templates for such projects as budget sheets, calendars, diet guides, newsletters, and stationery  
(800) 772-6735; (613) 728-8200  
<http://www.corel.com>



# A Photographic Pairing

**E**very month I'll be scouring the tech world for great dynamic duos. Whether cutting edge, bargain-priced, or just plain useful, these products are sure to make your life just a little better. This month, I found the perfect TechMates twosome for you—an inexpensive 4MP (megapixel) digital camera and multifeatured software to enhance, categorize, and organize all of your precious photos.

The quality of digital cameras continues to go up while the prices come down. Just a few years ago, a 4MP camera for under \$200 would have been only a dream. Today that dream is a reality with the Concord Eye-Q 4360z. If you are looking for a good point-and-shoot camera, you will find this Concord quite likeable. This compact camera will easily fit in a shirt pocket, and at 7.7 ounces, it is one of the lightest cameras of this type I've seen. The 3X optical zoom and 6X digital zoom is adequate for the average user. Six scene modes help beginner and intermediate users get the correct exposures for a variety of shooting conditions. Advanced settings are somewhat limited, which is why I consider the point-and-shoot variety better suited to the casual photographer rather than an advanced user. Like many other digital cameras, this one has a shutter lag. Because it takes the camera several seconds to snap the photo after you have pressed the shutter, it is better suited to still photography, family events, and vacation photos. If you want to snap action shots of the kids or sport scenes, you will want a camera with a faster response.

The Concord's 1.5-inch LCD (liquid-crystal display) was difficult to see in bright light but functioned well otherwise. The camera's dials and knobs were convenient and easy to operate. Thanks to the 4MP capability, pictures taken with this camera were crisp and clear. The camera also takes minimovies at 30fps (frames per second), which is a better frame rate than most still cameras, but it does so sans audio. Those movies, however, will quickly fill up the 16MB of internal memory, so you will want to consider purchasing an optional SD (Secure Digital) memory card to increase the camera's storage capacity.

Battery life was adequate. Two rechargeable NiMH (nickel-metal hydride) AA batteries and a four-battery charger are included. The camera also comes with case, wrist strap, and cables you can use to show your photos and minimovies on the television. All in all, you can buy a faster camera with more advanced features, but this inexpensive, no-frills model will find a home with casual photographers.



**Concord Eye-Q 4360z**  
\$199  
Concord Camera  
(954) 331-4200  
<http://www.concordcam.com>

**Paint Shop Photo Album 5**  
\$49, boxed; \$45, download  
Jasc  
(800) 622-2793  
(952) 930-9800  
<http://www.jasc.com>

## Store, Correct & Enhance Your Photos

I don't know about you, but I have boxes and boxes full of old photographs waiting to be sorted, categorized, and put in albums. I have sworn that I won't let the same thing happen with my digital photos. Paint Shop Photo Album 5 is the perfect solution. It lets you correct, enhance, and adjust your photos. Then it gives you all the tools you need to categorize, archive, and share your photos, as well.

The Album's editing tools are simple to use. The Quick Fix tool automatically improves the color, contrast, and brightness of your photos, but you can also make each of these modifications manually with nine different adjustments. The program doesn't have the advanced features of a full-blown editing program, but it does allow for simple adjustments such as removing red-eye, cropping the photo size, and compiling panoramic scenes. You can also add frames, photo edges, and borders.

Once your photos are in tip-top condition, Photo Album will give you easy-to-use tools to create albums. The program can read EXIF (Exchangeable Image File Format) data that is embedded in many digital photographs, including those taken with the Concord Eye-Q 4360z. So as you put each photo in the album, if it was taken with an EXIF-capable camera, the date and time the photo was taken are automatically entered. You can also add your own titles and keywords to make it easier to locate photos.

Paint Shop Photo Album makes it easy to accomplish sharing and archiving tasks. It lets you create slideshows with music that can be copied to a CD and shown on your computer or television. It helps you to archive your photos on CDs, as well. It will automatically optimize your photos so you can share them by email.

Like the Concord camera, this program gives you a lot for your money. Jasc has free unlimited technical support.

This TechMates duo will help you enjoy the world of digital photography and keep all those photos organized at the same time. ■

BY SANDY BERGER

*Sandy Berger is a nationally respected technology author and computing expert. Sandy's aim is to convey to others in easy-to-understand language what they need to know to take advantage of today's technology. Visit her at <http://www.compukiss.com> or email her at [SandyBerger@smartcomputing.com](mailto:SandyBerger@smartcomputing.com).*

# Immaculate Reception

The 802.11g USB 2.0 adapter with twist-and-shout flexibility!

180°

IOGEAR's ultra fast Wireless-G 802.11g USB 2.0 adapter can help you connect to a wireless network with "higher power." It bends and twists to ensure optimal reception so you can work at up to 54Mbps at home or anywhere a hotspot is available.

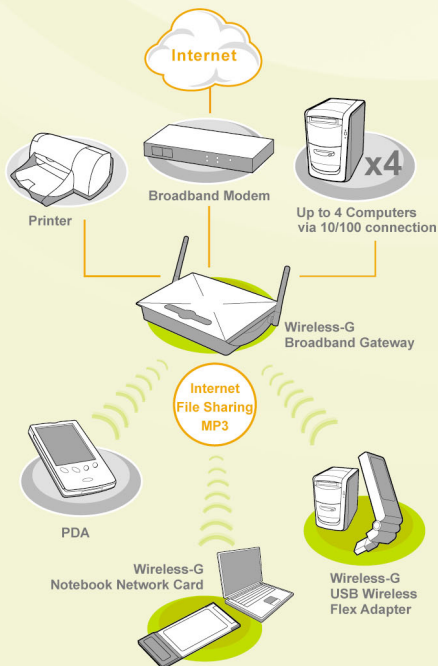
Installation takes just moments. All IOGEAR Wireless-G products offer the latest security and are backward compatible with 802.11b.

So "retire the wire" without sacrificing Internet speeds - pick up IOGEAR's line of Wireless-G products today!

GWU513

## Wireless-G to USB 2.0 Flex Adapter

- Uses USB port, not cardbus or PCI slot
- No configuration hassles
- Flexes and pivots for optimal reception



2 IN 1  
Wi-Fi Router  
&  
Print Server!



GWA501

## Wireless-G Broadband Gateway/Print Server

- Fast setup in just a few simple steps
- Includes everything for effortless installation
- Built-in firewall, supports WPA and WEP
- Built-in print server shares your printer with all connected computers

GWP511

## Wireless-G Notebook Network Card

- Low-profile high-gain antenna achieves favorable sleek design
- Included Software Access Point allows you to turn your notebook into a wireless Access Point



Retire the Wire.

# A Real Backup

## Give Your ABS A Workout

**Joshua Gulick**

Send your comments to  
joshua@smartcomputing.com



### ABSplus

\$319

CMS Products

(800) 327-5773

<http://www.cmsproducts.com>

I regularly break computer components, and not just at work. Thus, I burn my home computer's important files to a CD-RW (CD-rewriteable) every other week and before I upgrade my PC. This backup system is a little tedious (in my case, the process requires about 20 minutes), but until my PC's most recent crash, it worked well.

A few weeks before my system's hard drive threw in the towel, I installed encryption software and transferred all of my passwords, including retail Web site passwords and IM (instant message) application passwords, to an encrypted document. I wrote down my encryption software's password and backed up the document to my CD-RW, of course,

but I forgot to burn the program's key to the disc. Unfortunately, this software-generated, random key complemented my password, which meant that without both password and key, neither I nor anyone else could access the document, even by reinstalling the encryption program. Did I mention that I had already shredded my paper copy of the document?

### Back To Square One

As I discovered, piecemeal backup solutions don't cut it when disaster strikes. If I used CDs to back up my entire system (which would have prevented my problem), I would have needed dozens of CDs and plenty of spare time. High-capacity, tape-based storage drives let you back up a full system to a single tape, but I prefer CDs because I can jump into the CD, find the file I want, and quickly restore it to my system. Although consumer tape-based storage drives do let users retrieve individual files, they aren't as fast and are sometimes difficult to access. This is where external hard drive-based backup systems, such as the CMS Products ABSplus (Automatic Backup System), really shine.

The travel-friendly ABSplus covers all the bases by offering a large storage

capacity and easy, fast access. The device, which is only a little larger than a (computer) mouse, includes two USB (Universal Serial Bus) cables. One of the cables transfers data between the device and the computer, while the other pulls power from the PC. As a result, you won't need to pack an extra adapter when you travel with the ABSplus. As long as your notebook or PC has power, the device does too. CMS also has a larger desktop version (called the Velocity) that includes an adapter and offers both notebook and desktop versions in a variety of storage sizes. I used the 60GB version, which easily backed up the 6GB or so of data on my test PC's hard drive.

### Back On Track

Of course, a fancy backup drive doesn't amount to much if you can't easily access your files. The ABSplus includes Bounce-Back Professional, which boasts a variety of backup and retrieval features. The most important feature is QuickRestore, which displays a Windows Explorer-like window that lets you browse your backed up folders and files just as you browse your computer. Restoring a file is as easy as choosing the folder to which you want to restore the file and then clicking Restore.

The ABSplus can act as a bootable drive, which means that if your hard drive fails, you can simply plug the ABSplus into your computer and let your system use it as a hard drive. Thanks to the software's Schedule feature, you can specify a recurring date and time and then let the device automatically back up your system while you're away from the computer. The device can completely copy your system every time it performs a backup, or it can copy only the files that have changed since the last backup, which speeds up the process.

I like the ABSplus' slim design, speed, and capacity, but it's the software that really seals the deal. You plug the ABSplus in, configure it, and forget it until the day it saves you from heartbreak. If I had backed up my system to the ABSplus before my drive crashed, I could have used it to run the PC until my new hard drive arrived. Sigh. ■



# Affordable Resolution

## Visioneer's OneTouch 9320 Color Scanner

**Chad Denton**

*Send Chad your opinions at  
chad@smartcomputing.com*



### OneTouch 9320 USB

\$149.99

Visioneer

(925) 251-6398

<http://www.visioneer.com>

**W**hen looking over the specs of the Visioneer OneTouch 9320, the 3,200 x 6,400 dpi (dots per inch) optical resolution immediately stands out. The next thing you notice is the \$149.99 price tag. For such a high resolution, the sub-\$150 price is eye-catching. I couldn't resist taking it for a spin.

### On The Desk

The 9320 looks pretty sharp. The gray lid looks nice against the black base. The lid opens along the long edge, making it a little easier to load photos and pages. Under some lighting, it can be difficult to clearly see markings along the base, making it difficult to align photos.

Connecting the scanner is relatively simple. Plug a USB (Universal Serial Bus) and power cable into the base. This is a little less convenient than some of the USB-powered scanners I've seen, but one extra cord isn't bad. The scanner is USB 2.0-compatible, but, of course, it's backward-compatible with USB 1.1.

### Software

Before you connect the USB cable to the PC, you need to install the software that accompanies your scanner. The installation procedure is fairly straightforward, but I did run into one snag. If you have an always-on broadband connection, the installer forces you to register before installing the driver. Users with dial-up connections are asked to register but aren't forced to register to proceed. Those who don't want to provide personal data to Visioneer will have to stoop to providing phony information. The PaperPort 8.0 SE software that's installed before the driver lets you get out of registration, but you have to register the driver before proceeding.

The PaperPort 8.0 SE software is user-friendly. Scanned images are saved in the MY PAPERPORT DOCUMENTS\Samples directory under My Documents. You can

move images to any of 12 folders. You'll find directories for bank statements, receipts, faxes, articles, and more. You can always create your own folders, as well.

All images are saved in PaperPort's proprietary MAX file format, but you can easily export images to JPEG (Joint Photographic Experts Group), BMP (bit map), TIFF (Tagged Image File Format), GIF (Graphics Interchange Format), and other common graphics formats. PaperPort lets you make basic touch-ups including removing red-eye and improving colors. If you prefer the look of black-and-white, you'll need to scan color images in grayscale because the software provides no easy way to convert color images to black-and-white. That means you'll need additional software to convert existing images to black-and-white.

### Scan Images

The scanner itself features five custom buttons: Scanning, Emailing, OCR, Copy, and Custom. The Copy button lets you send images directly to your printer while the Email button lets you send images to supported email applications. However, the Thunderbird email client I use isn't supported. The OCR button scans documents and forms. The Scan button automatically scans an image and sends it to the PaperPort software. The Custom button lets you send a scanned image to another graphics application. The only supported application on my system is Microsoft Paint.

By default, the resolutions used when you press a OneTouch button are a little low. You can use the OneTouch Configure software to increase the resolutions. Just remember that increased resolutions will take more time to scan and process.

The included OCR (optical character recognition) software isn't always the best. I had some problems with random font shifts in some documents, but it seemed to at least properly identify the words in most cases.

Images didn't look too bad, and the PaperPort software makes it easy to improve images that come out looking dull. You do tend to get what you pay for, and I'm sure more expensive scanners provide better image quality, but for the price, I came away fairly impressed by the 9320. ■

# Ordinary Mice, Step Aside

## Fellowes & Microsoft Abandon The Standard Mouse Design

**Kylee Dickey**

Send your comments to  
kylee@smartcomputing.com



### Cordless Micro Trac

\$62.99

Fellowes

(800) 945-4545; (630) 893-1600

<http://www.fellowes.com>



### Wireless IntelliMouse Explorer

\$54.95

Microsoft

(800) 426-9400; (425) 882-8080

<http://www.microsoft.com/mouse>

If the variety of pointing devices on the market is any indication, it seems that the world can never have too many mice or trackballs. For manufacturers, the name of the game is designing attention-grabbing products. I tested two pointing devices that really stand out from the crowd, the Fellowes Cordless Micro Trac and the Microsoft Wireless IntelliMouse Explorer. Both incorporate RF (radio frequency) wireless technology, but the similarities stop there.

### Fellowes Trackball Takes Flight

Fellowes' Cordless Micro Trac is a small product you hold in your hand like a joystick. Slip your index finger into a ring at the top of the device and wrap your middle, ring, and small finger around a handle beneath the ring. There are two buttons and a trackball built into the top of the ring. Control on-screen pointer motion by rolling the trackball with your thumb. The left- and right-click buttons are above the trackball. I am right-handed and found it awkward to reach over the trackball to click the left button. This was hardly a concern, however, because Fellowes included a trigger button inside the Cordless Micro Trac's ring. Use your index finger to press the trigger and perform the same function as clicking the left button. The trigger button worked for me, but users who tightly grip pointing devices may accidentally press the trigger button.

Several companies sell wired versions of this device, but those products do not have the handle, only the ring with trackball and buttons. The change in design with the wireless model was to accommodate the device's two rechargeable AAA NiMH (nickel-metal hydride) batteries. Although Fellowes includes a pair of batteries, no

charger is provided. This new cordless model is bulkier but actually provides a better and more ergonomic grip.

The Cordless Micro Trac has a couple of weaknesses. Over time, its accuracy and response will suffer unless you periodically remove the trackball inset ring and trackball and clean the inside of the device. If you frequently switch between keyboard and mouse, you will quickly tire of setting the Cordless Micro Trac down, typing, and picking the Cordless Micro Trac up again.

### Microsoft's Tilt-A-Wheel

This year, Microsoft introduced a new mouse technology, the Tilt Wheel, a scroll wheel that not only spins to control vertical scrolling but also rocks from left to right to control horizontal scrolling. The Tilt Wheel responds well. I worried I might accidentally rock it from side to side, but the wheel provides the right amount of tension.

The Tilt Wheel is very handy when browsing the Web. Better yet, operating the Tilt Wheel is intuitive. It takes no time to catch on. Consider me sold on Tilt Wheel technology.

As is standard with Microsoft's IntelliMouse line of products, this mouse has five programmable buttons (left, right, scroll, and the thumb-operated forward and back buttons). This optical mouse doesn't require cleanings and provides precise pointer control. The Wireless IntelliMouse Explorer fits comfortably in the right hand and is available in six colors: Platinum, Grey Metallic, Metallic Blue, Black Leather, Immersion (a deep blue), and Night Vision (a green design reminiscent of "The Matrix").

### Wireless Wishes

Microsoft's mouse offers several advantages over Fellowes' device. There is no need for periodic cleanings, there are more buttons, it's easier to switch between the Microsoft mouse and the keyboard, and of course, the Wireless IntelliMouse Explorer has that nifty Tilt Wheel. The Cordless Micro Trac is a handy device for users whose primary activity is Web browsing. However, if you want a mouse for a variety of tasks, the Wireless IntelliMouse Explorer is the clear winner. ■



# Hardware The Hard Way

## eBay Saves Money, Costs Sanity

**Nathan Chandler**

*Send insights and insults  
to Nathan at  
nathan@smartcomputing.com*



**M**y notebook's hard drive was as stuffed as a wall-mounted rainbow trout and nearly as dead. I needed more storage space, fast, before my drive spun its last.

With USB (Universal Serial Bus)-enabled external drives selling for \$140 and more in local stores, I figured I'd try to save a few bucks by buying my new hardware through an eBay auction. I found the perfect product in an 80GB 7,200rpm Western Digital hard drive with High-Speed USB 2.0 compatibility. The auction was ending soon, so I placed my bid, and an hour later, I was the proud owner of a \$92 drive. Little did I know, my winning bid opened a Pandora's box of hardware miseries that proved it doesn't always pay to use technology to buy more technology, especially when there are humans involved in the transaction.

### The Take

On eBay, large capacity, high-speed external hard drives were selling for between \$90 and \$150. Like any budget-conscious buyer, I checked out the cheaper drives first, and because I was in a rush, I viewed auctions that were due to end within a few hours. The drive I found was a trusted brand hovering at a reasonable price, and the seller had a very good feedback rating. Most comments about the seller glowed about fast transactions, and I took these as reassurance that I was dealing with a conscientious user. This was my first mistake.

I paid instantly via credit card and a PayPal account, as this was the only payment option listed for the auction. That was mistake number two.

After waiting more than a week for the drive, I contacted the seller (a 16-year-old from New England) for an explanation. His brief reply indicated that he would send the drive soon. I waited. I received more excuses. And finally, after three weeks, the

seller sent this ominous reply, "Well I am in the process of closing my eBay account cuz [sic] i [sic] always envolved [sic] in a fraud."

### Protect Yourself

You might ask why eBay didn't protect me from this crooked, inept seller. Perhaps a better question is: Why didn't I do a better job of protecting myself?

In part, eBay's user rating system was to blame. At a glance, the seller's rating was nearly flawless, but it turns out that although he was prompt in paying for items he'd won, he wasn't as adept at selling, yet the feedback system doesn't differentiate between transaction types.

Still, my biggest mistake was paying before ironing out details with the seller. This was not a great idea, especially because the shipping terms weren't spelled out in the item's description. Paying before contacting the seller gives the seller leeway to do whatever he pleases with your merchandise. He can ship it right away, or he can sit on it for two months.

There were plenty of other clues that something was awry. Had I taken the time to closely review the item, I would've saved myself a lot of trouble. The Western Digital product link in the description did in fact lead to the specs for an 80GB hard drive—an internal hard drive. And the photo that the seller provided in the auction wasn't of a hard drive—it was a photo of a box containing a hard drive enclosure. Ah, the humiliation.

### It's Only Money, Right?

With a botched eBay auction, the best way to resolve the problem is by working things out with the seller. In this case, that wasn't an option. I called my credit card company and began the tedious task of reversing the purchase, glad for the fact that at least I hadn't paid with a check.

On eBay, there's only one way to buy new hardware: Carefully. Take extra time to review every item you bid on and interact with the seller beforehand. Otherwise, you're better off paying more for an item offline. ■

# Fat Workload?

## Low Carb Solution, With Less Bytes!

### Scale Down

Lighten your day by accessing your office PC from home and finishing work when it's convenient for you. Imagine... you'll leave the office early, beat rush hour traffic, spend more time with family and avoid going into the office on weekends. GoToMyPC is the ultimate productivity tool, letting you work where you want, when you want.

### A Lighter Load

Because GoToMyPC is Web-based, all that is required is a 2-minute, 1.4 MB software download on your PC and an Internet connection. That's it! Simply log on to [www.gotomypc.com](http://www.gotomypc.com) from any computer, and your PC desktop instantly appears – just as if you were in front of it. Stop carrying your bulky laptop with you. Anything you can do at your PC, you can do from anywhere!

### A Simple Solution

Unlike pricey and complicated VPN or packaged remote-access software, GoToMyPC's Web-based technology is self-configuring so it's ready to use right away. No additional software is required and it works automatically with firewalls. GoToMyPC is the easiest, fastest and most secure way to have complete and instant access to ANYTHING on your PC from ANYWHERE.

- Web-based remote access
- Automatic, 2-minute setup
- Pre-configured security features
- Compatible with firewalls
- **FREE** tech support
- **FREE** upgrades for life
- **FREE** 30-day trial period

### Who uses GoToMyPC?

David, a senior executive, is tired of working late nights at the office. Chris, a network support manager, wants to spend less time at the office on weekends and more time with his family. And Katie has been on maternity leave, and now would like to work from home. They all need a way to work smarter, not harder.

### Need we say more?

**"The remote-access star is GoToMyPC."**

— PC World Magazine, Editors' Choice

**"You'd be nuts not to sign up!"**

— CNET, Editors' Choice

**"It makes life easiest for its users."**

— Laptop Magazine, Editors' Choice

**"First-rate security."**

— ZDNet

**"GoToMyPC is the most useful tool."**

— eWeek

**"The easiest remote-access tool available."**

— Computer Shopper Magazine

**"Highly useful, very easy and quite reliable."**

— Smart Money

**"For remote access, GoToMyPC is far out!"**

— Fortune

**"It worked flawlessly."**

— The Wall Street Journal

**"An impressive tool."**

— The New York Times

### Can I try it free?

Yes! You can try it for FREE for 30 days. GoToMyPC offers single user, small business and enterprise plans.

Visit [www.gotomypc.com/smart](http://www.gotomypc.com/smart) and get started now.



“Best Remote Access Software.”

— PC World Magazine

“GoToMyPC  
simply works  
better than  
pcAnywhere™.”

— Chris Edgar, GoToMyPC Customer



**GoToMyPC®**

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[www.gotomypc.com/smart](http://www.gotomypc.com/smart)

866.270.5252

# You've Got Mail

Take Your Pick Of Email Apps



September 2004 Smart Choice • Eudora Version 6.1

Email use has become so ubiquitous that we send billions of messages per day worldwide. For many, sending or receiving email involves firing up the email software that came bundled with Windows, typically Outlook Express. But using Outlook Express isn't the only option for working with email. A variety of email apps are on the market today, and we'd like to help you make an informed decision about which one best fits your needs.

## How We Tested

We selected programs that work with standard email accounts. We did not

evaluate Webmail programs such as Yahoo! Mail or Hotmail, nor did we consider AOL. We installed each program on a Windows XP PC with a 1.28GHz Intel Pentium 4 processor, 128MB of RAM, and 65GB of free hard drive space. This PC met the system requirements of each program. We considered many criteria in evaluating each program, including cost, ease of installation, ease of use, and security and privacy features.

### Eudora 6.1

\$49.95 (\$39.95 upgrade); also free versions (Sponsored or Light modes)  
QUALCOMM  
(858) 651-1017; (800) 238-3672

A powerful spam filter, virus protection, usage statistics, a Google search engine, hefty customization features, an easy-to-use address book, a sophisticated filing tool, speedy



background operations, and yes, even a sense of humor: Eudora is a comprehensive program that provides the end user with a wide array of features.

Let's start with some of the features new to the latest version of Eudora. SpamWatch is a junk-filtering tool you can train to keep those annoying messages from your inbox. When you receive unwanted mail, click a Junk icon to quarantine spam messages. SpamWatch learns which messages are spam and begins to automatically file them as junk. If it misfiles mail as spam, train it in the same way. SpamWatch also includes a statistics window so you can track how much spam you receive and the tool's accuracy.

Other new Eudora features include WebWords, which lets you search the Web using Google's technology via a search engine at the top of the email program or by right-clicking a word contained in an email message. There's also the Content Concentrator, which simplifies long, threaded messages by removing redundant pieces of earlier conversations, especially useful when there are multiple replies in one message. The Contextual Filing feature lets you file a message in a folder or mailbox by clicking a word in that message.

Eudora also contains all of the features you would expect from a high-quality email program, such as the ability to quickly search messages, customize the interface, automatically add email address listings to your address book, and use the software with multiple accounts. And it's all done with a

**Eudora**

Performance	5	Ease Of Use	4.5
Installation	5	Documentation	5
Price	4		

**Overall Score** 4.7 / 5

sense of humor. For example, one time when we launched the Sponsored mode, we were told that “sadly” (Eudora’s words) Eudora was converting to Light mode, and the software pointed us to a Web page that explained why.

There’s a lot that goes on behind the scenes, as well. Eudora provides support for IMAP (Internet Message Access Protocol) and POP (Post Office Protocol) accounts, and it supports the SSL (Secure Sockets Layer) protocol for security in sending and receiving email.

Eudora comes in three versions. The full version includes all the features we’ve covered here. Sponsored mode, in which the user sees an ad window and up to three sponsored toolbar links, includes all the features of the full version with the exception of SpamWatch and technical support. Light mode has fewer features and no advertising. Eudora requires Windows 98/2000/Me/XP and a POP3 or IMAP4 mail account.

**Thunderbird 0.7**

Free download (\$14.95 Mozilla CD and guidebook)  
The Mozilla Organization  
<http://www.mozilla.org/products/thunderbird>

Open source is the mantra of software developers who believe that **source code**—the programmer’s language of instructions for the computer to perform functions in a program—should be made freely available. Proponents of open source argue that letting as many developers as possible work on a program helps the software evolve in the best possible way. And that’s just what’s happening with Thunderbird 0.7, Mozilla’s email client. A community of developers worldwide is working to add features and functionality to this fast, light email program.



Thunderbird’s speed is obvious when you first launch the program. Not only does the program load quickly, but the interface is also intuitive, so it doesn’t take long to learn how to use or customize the program. The top toolbar shows basic icons, such as Get Mail, Write, and Address Book, with a list of folders on the left and the message listing and preview pane occupying the rest of the interface.

Thunderbird has many useful features, including a junk mail filter, built-in spellchecker, customizable layout, integrated newsreader, and a variety of themes. What really makes this email software stand out, however, is the number of available extensions.

Extensions are tools that work with a program to give it added functionality. The Weather extension presents the forecast for any ZIP code in the program, the Easy Get Mail Button extension makes it easier to receive mail for one or multiple accounts, and the Dictionary Search extension lets you look up or translate a word. These extensions are optional, though, so if speed is your top concern, not installing these customizations will keep the program running as lightly and as quickly as possible.

Security is another strength of this software. Thunderbird doesn’t allow scripts to run by default, which helps protect the email client from infection by worms, viruses, and Trojan horses. It also offers support for digital signing, message encryption, and certificates.

As befits the open-source mentality of Thunderbird’s developers, the Web site

**Mozilla Thunderbird**

Performance	4	Ease Of Use	4.5
Installation	5	Documentation	4
Price	5		

**Overall Score** 4.5 / 5

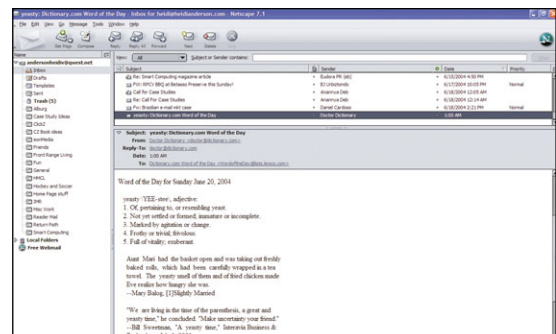
offers links to dozens of resources. Check the support forum for user tips, the FAQ for answers to burning questions, and the MozillaZine for almost anything you’d want to know about Mozilla products. Thunderbird works with IMAP and POP accounts and works with Win98/NT/2000/Me/XP.

**Netscape Mail 7.1**

Free  
Netscape Communications  
(650) 254-1900  
<http://channels.netscape.com/ns/browsers/default.jsp>

One of the most established pieces of software in this roundup, the Netscape mail client has been around since 1994. Netscape lost much of its market share as Internet Explorer grew in popularity, but both the Web browser and email software are still freely available.

Not surprisingly, as it was built with overlapping technology (Netscape launched the Mozilla project in 1998), Netscape (now a part of AOL) is similar to Mozilla Thunderbird in look and feel. The interface is easy to use, with icons at the top, a folder list on the left, and a message and a message index and preview pane on the right. Drag and drop messages among folders, hide or show various toolbars or message panes, and use color-coding to sort messages and folders into categories. Set





**Netscape Mail**

Performance	4	Ease Of Use	4
Installation	5	Documentation	3
Price	5		
<b>Overall Score</b>		<b>4.2 / 5</b>	

up Netscape to check for email at regular intervals, and when new mail lands in your inbox, an alert message pops up in your Windows System Tray, even if you're working in another program.

Netscape has made some improvements over earlier versions, and one of the most notable is the Quick Search function. If you just can't find that vital message from a colleague, use this tool to search by a number of criteria, including subject line, sender, body text, and date. A similar tool allows you to search your personal address book. Other tools and features include a trainable junk mail control, return receipts, the ability to synchronize a Palm address book with the email software, and an Internet newsgroup reader.

Netscape has long had noteworthy security features, and the latest version is no exception. If you have obtained a digital signature, which allows your recipients to verify a message really is from you, you can attach this to your emails. You can also encrypt a message, provided you have a digital certificate.

Setting up accounts with Netscape Mail is easy, thanks to the step-by-step installation procedure, and you can set up one or multiple POP or IMAP accounts. Netscape works with any ISP (Internet service provider) account, including AOL mail, and, not surprisingly, it also works with a Netscape Mail account. You must download the entire suite of products, including Netscape Navigator and Instant Messenger, but you do not need to use these products in order to use Netscape Mail. Netscape 7.1 requires Win98/NT/2000/Me/XP.

**Outlook Express 6**

Free  
Microsoft  
<http://www.microsoft.com/windows/oe>

An email software article wouldn't be complete without Outlook Express, Microsoft's free program that comes bundled with every copy of Windows sold to home or home office users. Outlook Express, along with the similar, more powerful email client Outlook, is one of the most widely used email clients in the world.

Outlook Express is a component of the IE6 package, so if the product isn't already installed on your PC, you must download and install Internet Explorer, although you can use Outlook Express independently of the browser. Like many other email clients, including the ones we've covered here, it contains newsgroups and contact tools, as well as email, and when you first open Outlook Express, you may see a window that displays all three tools. To access the email section, click the Read Mail link under Email on the main page.



You'll see a standard, intuitive interface, with toolbars at the top, message folders at the left, and a message index and preview pane on the right. You can customize the interface in many ways, including the layout of the toolbars, the preview pane display, and the folders list and status bar. Customize messages by creating personal signatures or changing text styles. One especially useful tool is the ability to work offline with your messages. Configure your account to automatically disconnect after sending and receiving messages so you can create email replies without tying up a dial-up connection.

Outlook Express works with any POP3 or IMAP account. If there's one drawback to Outlook Express, it's the number of viruses that affect the software. As is the case with many popular products, virus writers seem to have targeted Outlook Express, and several largely distributed viruses have recently exploited security holes in the Outlook Express Address Book. Outlook Express

**Microsoft Outlook Express**

Performance	4.5	Ease Of Use	4.5
Installation	5	Documentation	3
Price	5		
<b>Overall Score</b>		<b>4.4 / 5</b>	

system requirements are Win98/NT/2000/Me/XP.

**Our Smart Choice**

All the products we've covered have many benefits. Outlook Express is designed for Windows and integrates well with other products, including IE. Open-source fans will appreciate the philosophy behind Thunderbird, and everyone can appreciate its speed and simplicity. Netscape Mail set the original standard for email and is easy to use. But we're particularly impressed with Eudora. The paid version has an initial cost, as opposed to the other three products here, which are free to download. But when we weigh in all of its features, including free tech support and powerful antispam tools, we bestow upon it our Smart Choice award. ■

BY HEIDI V. ANDERSON

**BUYING TIPS**

- **Upgrade wisely.** It's a good bet that you already have email software on your PC. If you're looking around for a product to replace the program you're currently using, research its capabilities to determine whether you can import your current address book, mail folders, and other data.
- **Consider your PC's other programs.** Does the software integrate with your browser? Will it work with your antispam applications? Take stock of your system before purchasing a product that may not work with your other software programs.
- **Get help.** Not all email programs, especially those that are free, include tech support. If you think you'll want to take advantage of tech support, you may have to pay extra for it, so consider this cost when investing in a product.

# A Fine Way To Print

## FinePrint

\$49.95

FinePrint Software

<http://www.fineprint.com>



**M**uch of the cost associated with owning a computer is incurred at the time you purchase it. Not so for printers. You can buy a printer for as little as \$50—even less if you account for rebates—but you will inevitably spend many times more than that for paper and replacement ink or toner cartridges. Indeed, depending on the type of printer you use and the type of documents you print, you could pay more than 25 cents for a sheet of paper, more than \$30 for an ink cartridge, and more than \$80 for a toner cartridge.

Recognizing the high cost of printer ownership, a pair of California-based software developers authored a program that lets users output multiple pages of text to a single sheet of paper. Their program, which is available today as FinePrint 5.25, helps you conserve paper, ink or toner, time, and money by providing an assortment of efficient printing functions.

The keystone function of FinePrint is its ability to print two, four, eight, or more pages of content on an 8.5- x 11-inch sheet of paper by dividing the sheet into halves, quarters, eighths, or more equal parts. For a test,

we printed a Microsoft Word document created in Times New Roman 12-point font. The printed document was easy to read at 8 pages per sheet and remained legible even when we configured FinePrint to produce 32 pages of text on a single sheet of paper (although we definitely recommend investing in a magnifying glass for comfortable reading at such a resolution). We should point out that we conducted our tests on an HP LaserJet printer. Whether an inkjet printer would provide comparable clarity and legibility at a 32:1 printing ratio is uncertain.

Beyond its ability to print multiple pages to a single sheet of paper, FinePrint helps you save on printing costs in other ways. For example, it gives you the option of removing ink-wasting graphics and unwanted pages from the documents you choose to print. It also lets you convert colored text to black so

that you can save your costly color inks for the times you need them most. As if that wasn't enough, FinePrint also supports

Rounding out FinePrint's robust feature set are a universal print preview function, an option for printing documents in booklet format, the ability to save documents in a variety of formats, an option for combining documents from multiple applications into a

### FinePrint

Performance	5	Ease Of Use	5
Installation	5	Documentation	5
Price	3		
Overall Score		4.6 / 5	

## FinePrint

double-sided printing on any printer. These settings, which you can achieve with a simple point-and-click, are not permanent and do not alter the contents of the original document.

The program's remaining features are designed to enhance your printing capabilities. We particularly appreciated a group of features referred to collectively as Stationery. The Stationery features make it easy to stamp your print jobs with the date, time, page number, total number of pages, your name, and more. You can set the customized stamp to appear as a header or footer or as a gray watermark in the middle of the page. You also can stamp the print job with a watermark that denotes it as a draft or final version; as urgent, confidential, or top secret; or for internal use only. You can even customize the watermark with any message of your choosing.

single print job, a scaling function that allows you to resize documents of unusual proportions for printing on a standard sheet of paper, adjustable margins and gutters so that you can leave room for binding, and a paper-saving meter that tracks and reports how much paper you have saved using FinePrint. The product also includes Form-Factory, a feature that enables you to create custom forms or letterhead and then use the forms or letterhead as underlying templates when printing other files.

Our only complaint is that FinePrint carries a relatively hefty price tag for something that amounts to little more than a printing utility. You have to print a lot to justify its cost. Having said that, however, we must admit that its value extends far beyond the monetary savings. FinePrint makes printing easier, faster, and better. ■

BY JEFF DODD

## Policing The Web With PopUpCop

### PopUpCop

Performance	4	Ease Of Use	4
Installation	5	Documentation	4
Price	4		
<b>Overall Score</b>		<b>4.2 / 5</b>	

In your effort to escape unwanted ads, a program such as EdenSoft's PopUpCop can prove a mighty ally. The shareware application installs itself on the Internet Explorer toolbar where it keeps a close watch over your online activity. PopUpCop remains silent and alert until it detects an unwanted intruder, at which point it springs into action and shuts down the ad before it has a chance to materialize on-screen.

If that's all PopUpCop did, it would seem like an expensive alternative to the various other utilities, such as the Google Toolbar, that offer pop-up blocking capabilities for free. But what sets PopUpCop apart from the competition—and justifies the \$20 price tag—is its ability to block other types of unwanted content, including scripts, images, animations, background sounds, Flash applets, Java applets, ActiveX controls, text marquee, timers, mouse tricks, warning messages, cookies, and automatic window resizing. Block each of these

items individually or in combination. You can set PopUpCop to one of three blocking configurations: Sites With Poupups (blocks pop-up ads); Annoying Sites (blocks pop-up ads, animations, background sound, and other site features that may prolong or disrupt); and Very Annoying Sites (blocks all but cookies and images.)

PopUpCop lets you customize almost every other program feature, including its appearance on the IE toolbar, the sound it plays when it blocks a pop-up ad, the kind of pop-up ads it blocks, what actions it should take when you close the

### PopUpCop

\$19.95  
EdenSoft  
<http://www.edensoft.com>



browser, and even the text it presents in its dialog box messages. Program PopUpCop to disregard these settings when you visit specific sites. All you have to do is type the names of the sites in the application's configuration dialog box.

PopUpCop won't interfere with other toolbars. You can try it free for 30 days before buying it. ■

BY JEFF DODD

## Under The PC Cover

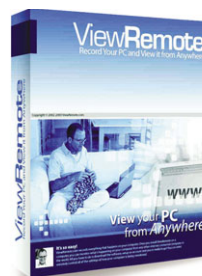
The same technologies that made it easier to work from home and communicate with colleagues have also made it easier to access porn and engage in extramarital affairs. In light of this fact, the developers of ViewRemote have produced a software-sleuthing agent that allows near real-time monitoring of your PC from any Internet-connected computer.

Here's how it works. You simply install the software on your PC (or whichever computer you want to monitor), set up a username and password, and configure the software with information about how often it should transmit activity logs and

where it should send them. Then you sit back and wait. Whenever the computer is on, ViewRemote will log which keys were pressed, which applications were opened, which Web sites were visited, and other types of activity that take place. It also will capture periodic images of the screen (the default setting is one screen shot every two minutes, but you can adjust this for more or fewer screen shots). The utility collects and compiles

the information and stores it in a log file on the hard drive or transmits it via email to your email address.

Review the log files by opening the emails or reading the log files. Better yet, sign on to the ViewRemote Web site from any Internet-connected computer and remotely take a peek at what's happening on your PC. You can monitor the content of chat room conversations and emails, follow Web activity, and check which apps have been opened.



### ViewRemote

Performance	4	Ease Of Use	3
Installation	4	Documentation	3
Price	2		
<b>Overall Score</b>		<b>3.2 / 5</b>	

What you see can help you identify an unfaithful spouse, curious kids, nosy co-workers, or idle employees.

ViewRemote operates in the background so unsuspecting users won't know it's there. The only catch to using the remote-viewing capabilities is that your PC must be connected to an active Internet connection at the time you want to spy on it. The program's purchase price includes six months of online monitoring; you'll have to pay \$9.99 every six months after that. ■

BY JEFF DODD

### ViewRemote

\$69.95  
Rampell Software  
<http://www.viewremote.com>



# IT'S SHOWTIME



Talk about box office hits. Verbatim's new DigitalMovie™ DVD recordable media is so hot you can almost smell the popcorn. Available as DVD-R or DVD+R, this 4X speed DVD media looks – even feels – like a Hollywood movie reel. But don't think you need a director's chair to use them. These mini-reels are perfect for home movies, business presentations, transferring files – anytime you want to add a little fun to the show. And of course, DigitalMovie DVD has the same unsurpassed performance and reliability you've come to expect from Verbatim. So make your next show a feature presentation. DigitalMovie DVD from Verbatim. It's the reel thing. For more information, contact us at 800-421-4188 or online at [www.verbatim.com](http://www.verbatim.com).

 **Verbatim.**

PUT YOUR WORLD  
ON VERBATIM

# IMPULSE ITEMS

Compiled by Joshua Gulick

Cool Stuff For Less Than \$20

See it, like it, buy it. Impulse Items are products that quicken your pulse and capture your attention but won't make you dig too deep into your wallet. Check these pages each month for the latest interesting and inexpensive computing items we've run across.

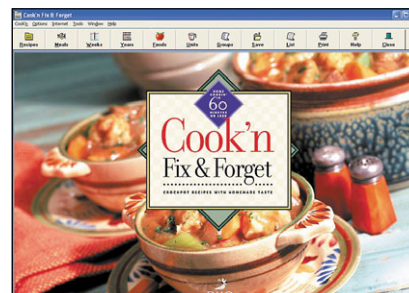


## FS5

Did you know that thieves stole the identities of more than 10 million people last year? Fellowes' site (<http://www.fellowes.com>), press releases, and commercials have offered so many discouraging news briefs that we're even suspicious of the early morning joggers who run past our garbage on trash pickup day. But Fellowes makes a good point: Whenever you toss printed transaction receipts and correspondence in the trash, you risk exposing identification information to the less scrupulous among us. Not surprisingly, Fellowes offers us this advice because it sells a line of shredders, including the FS5. The Fellowes site lists much higher prices for its products, but we found the FS5 model for less than \$20 at many online retailers. If you're not sure what size of shredder you need, visit the site's main page, click Product Selection, and select Shredders.

## MOUSE SKATEZ

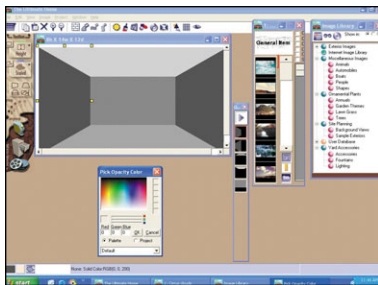
As if a mouse isn't already a wrist injury hazard, older mouse feet often develop sticky patches that occasionally stop the mouse in its tracks when you try to move it around. If you want to keep your mouse feet clean and slick, try BTP's (Blooming Tree Productions') Mouse Skatez (<http://www.gamerzstuff.com>). This product helps your mouse glide quickly over your desk or mousepad. You can trim the special tape and then put a small "skate" over each foot, or you can place long strips near the front and back of the mouse. You can buy a pair of Mouse Skatez for only \$2.



## COOK'N FIX & FORGET

We love Crock-Pots. After you prepare a meal and put it in a Crock-Pot, you won't be able to eat it for several hours, which is as good an excuse as any to jump online. So, while you're Web browsing, surf over to DVO Enterprises' Web site (<http://www.dvo.com>), home to Cook'n Software. DVO Enterprises sells more than 15 different recipe programs, all of which use the Cook'n recipe engine to help you organize recipes, store pictures, and make grocery lists. Once you buy a Cook'n application, you won't need to buy other Cook'n programs; you can buy the less expensive Recipe Downloads and add them to your Cook'n program's list of recipes. And wouldn't you know it, Cook'n Fix & Forget has a bunch of Crock-Pot recipes. Plus, if you enter various ingredients into Fix & Forget, it will create a recipe for you. Buy yourself some time (and recipe software) for \$14.95.





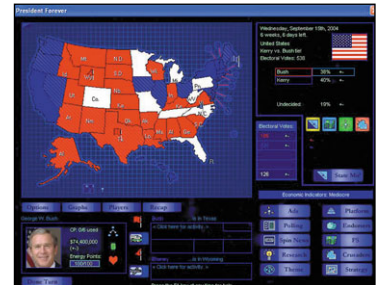
## INSTANT HOME DESIGN

You don't need to be a designer to remodel your home, thanks to TOPICS Entertainment's latest design software suite: Instant Home Design (<http://www.topics-ent.com>). If you're handier with a mouse than a sketchpad, grab the Instant Home Design suite and let the Instant Remodeling program handle the details. You can import digital photos of your house's interior into Instant Remodeling and use them as your templates. After you plan renovations for a few rooms, install the suite's Instant Interior Design, which has thousands of images of wallpaper, paints, and other furnishings that bring your (virtually) remodeled rooms to life. Place any of Instant Interior Design's items in your Instant Remodeling room. TOPICS Entertainment doesn't have an online store, but you can find the software suite at computer retailers (online and offline) for less than \$20.



## REELQUICK RETRACTABLE CABLES

Wireless technology has already rendered many types of cables unnecessary, but travelers still find themselves stuffing bunches of tangled cables into their carry-on luggage. If you're sick of untying cables, take a look at IOGEAR's ReelQuick Retractable Cables (<http://www.iogear.com>). The cables extend (up to a total length of 5 feet) from a small device that houses the coiled cables. Unlike some retractable cables, you don't need to extend ReelQuick cables completely. You can recoil cables by simply pulling both ends gently. IOGEAR offers retractable Ethernet, FireWire, modem, and USB (Universal Serial Bus) cables. Each cable is available for \$19.95 and includes IOGEAR's three-year warranty.



## PRESIDENT FOREVER: 2004

Despite its oxymoronic title, President Forever: 2004 from Hotpot Software (<http://www.presidentforever.com>) simulates real-world U.S. political scenarios. Whether you want to lead your candidate's campaign or run for president yourself (well, maybe only in the virtual world), you'll need to develop and implement a campaign strategy. The simulator game includes the 2004 presidential election scenario, as well as the 1992 (Clinton vs. Bush), 1980 (Reagan vs. Carter), and 1960 (Kennedy vs. Nixon) scenarios. You can develop platforms and give speeches to sway user opinion. Thanks to the new version's interface, users can check win/loss statistics after the election. The game supports up to four players and lets users edit candidates. Download the trial version at no charge or buy the full version for \$12. President Forever: 2004 supports Windows 98/NT/2000/Me/XP.

## USB EXTENSION DOCKING BALL

Unless your computer's case has front-panel USB ports, you probably dread plugging USB peripherals, such as digital cameras, Web cams, and digital music players, into your system's rear USB ports. And if your computer case resides in a cabinet or under your desk... well, that's even worse. Enter Linxcel's USB Extension Docking Ball (<http://www.monoprice.com>). Thanks to the USB Extension Docking Ball's 5-foot cable, you can plug the half golf-ball-shaped device (complete with a golf ball's dimples) into your computer's rear USB port and place it on your desk. The ball includes a single USB 2.0 port. The USB Extension Docking Ball is available for \$3.45.





# Windows XP

## Get A Fresh Start

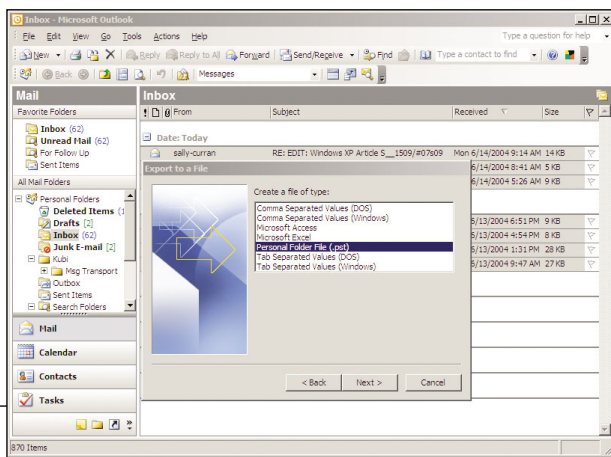
**I**t might be hard to even consider a clean reinstallation of Windows XP, a process that obliterates your apps and document files and reformats your hard drive.

One reason might be to improve your PC's performance, especially if you've been using the computer for three or more years. As you've added and removed apps and devices, you've added files and Registry entries that gum up Windows' works. By starting from square one, a clean reinstallation can make your PC as quick as the day you bought it.

You may also decide to reinstall if you've managed to contract a virus, or several viruses, and your computer hasn't been right since. The default WinXP reinstallation, which maintains your files and applications and settings, may not eliminate the effects of a virus, but a clean reinstall will because, by definition, it eliminates everything.

This article steps you through the preparation, execution, and aftermath of a clean reinstallation of WinXP. It could take half a day or more to start, and to some degree, you won't finish it until you reinstall the applications you use every day. And it's not for everyone: You may not even have everything you need to do it correctly.

Before a clean reinstallation, back up Outlook email messages, address books, and other folders by exporting them to PST (Personal Folder) files.



### Gather Your Materials

To perform a clean reinstallation of WinXP, you need your WinXP CD (or the WinXP reinstallation CD your PC manufacturer provided) and the associated product key (the 25-character alphanumeric code on the back of your WinXP CD sleeve). If you upgraded from an earlier version of Windows, you'll need the WinXP CD (not

the reinstallation CD) and product key for that earlier version.

You'll also need CDs and product keys or registration codes for all your applications (and if the applications are upgrades, CDs and product keys/registration codes for the applications you upgraded from), as well as drivers for your hardware. If your PC is newer, you'll especially need the driver or resource CD your PC manufacturer provided.

You'll need some sort of hardware for making backups of your most important files before you reinstall Windows. An optical drive or Zip drive is fine—an external hard drive is ideal. Set aside a good chunk of time, at least half a day if you're happy to reinstall applications as you need them or a whole day if you want to re-create your system before getting back to work.

### Back Up Data & Passwords

Your next step is to make backups. Copy all of your document files, installation files, updated device drivers, fonts, pictures, and email folders and address books to removable media. Remember to copy not only your entire My Documents folder (including the My Pictures and My Music folders therein) but also other folders where non-Microsoft applications store their document or data files. To copy your email folders and Address Book, use your email program's Export feature.

Jot down any product or registration codes you need to install or unlock applications you purchased online. Make note of usernames, passwords, and other information you need to connect to the Internet, configure your email, log on to your network, upload to your Web site, and sign on to any online publications, stores, or services.

The above is not an exhaustive list. It's a good idea to run through your All Programs menu to remind yourself about anything worth backing up.

### Set Up Your BIOS

Before you begin reinstallation, you need to set your PC to boot from your optical drive. Check your manual for instructions for getting to your BIOS (Basic Input/Output System) setup; it usually involves pressing a function key while your computer starts up. Once there, go to the Boot section and change the boot order so your computer



# Windows XP

attempts to boot first from your CD/DVD drive and then from your hard drive. Again, check your computer manual for the instructions for making and saving this change. When you finish your clean reinstallation, restore the boot order so your PC boots from your hard drive first.

## Ready To Go

Insert your WinXP CD in your CD/DVD drive and turn off your PC. Disconnect the computer from your network and disconnect any external hardware other than your keyboard and mouse, which you'll need for the installation. If you've installed a wireless keyboard and mouse, temporarily replace them with PS/2 or USB (Universal Serial Bus) equivalents—wireless hardware may not work during the reinstallation process.

Restart the PC and pay attention to the screen. When you see a message telling you to press any key to boot from CD, press something before the message disappears. (If you miss your chance, restart the computer and try again.) You'll see a blue setup screen; in a gray bar at the bottom of the screen, you'll see the names of several drivers WinXP needs to load in order to set up from your RAM. When the Welcome To Setup screen appears, press ENTER. Press F8 to accept the End-User License Agreement. The setup utility searches for previous Windows installations. When it finds yours, press ESC to continue installing a fresh copy.

The setup will display the drive partition your previous version of Windows is installed on. Press D to delete this partition. When you see the screen warning you about deleting the partition, press ENTER; when you see the next warning, press L. Setup will show you your new, unpartitioned space; press C to create a new partition here. If you're happy with the size entered in the next screen, press ENTER to confirm. Options for formatting the partition will appear; in almost every case, Format The Partition Using NTFS File System is best.

Wait while setup formats the hard drive. It might take a half hour or more; our 20GB drive took a little over 20 minutes.

Once your hard drive is formatted, installation begins. The PC prompts you to confirm regional options, enter your Product Key (and a CD and Product Key for your previous version of Windows if you're using an upgrade CD), enter a name and password for your computer (save the password for later), specify modem-dialing instructions, and confirm your time zone. Then Windows loads on your computer. When you're

prompted to register with Microsoft and connect to the Internet, choose Not At This Time in both cases. Enter your name and click Finish.

## Time To Rebuild

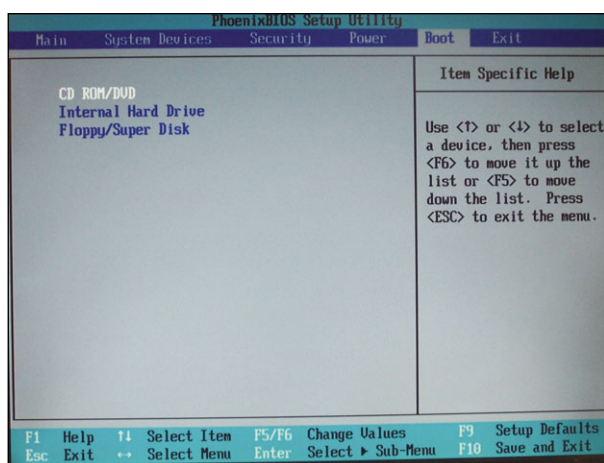
Your next step depends to some degree on preference. Here's one order:

**Install necessary devices.** Click Start, right-click My Computer, choose Properties, click the Hardware tab, and click the Device Manager button. Look for any categories or devices marked with a yellow exclamation point or question mark and install the drivers for those devices.

**Odds and ends.** Install your antivirus software and your network hardware, if necessary. Set up your Internet connection, activate the Windows Internet Connection Firewall (if your network hardware doesn't include a firewall), and download and install any updates to your antivirus software. Microsoft's Knowledge Base and/or the users manuals for these utilities should help you get everything put back together.

**Visit Windows Update for the latest patches and fixes.** Click Start, All Programs, and Windows Update; let Windows install scanning software and any service packs or critical updates it says you need.

**Install applications and copy documents back to the computer from your removable media.** Install apps and copy documents as you need them. Use your antivirus program to scan downloaded installation files, email and Address Book folders, and documents before copying them back to your PC.



Use your computer's BIOS (Basic Input/Output System; or Setup) utility to set your computer to boot from your CD/DVD drive.

You may need to re-establish settings you used to customize your Desktop and apps so they look and work the same as they did before you reinstalled. ■

BY MARK SCAPICCHIO

# Windows Me

## Update Device Drivers In Windows Me

The process of updating a device driver can be one fraught with frustration and difficulty. With the right tools and knowledge, though, it's not nearly as bad as it may seem. We'll detail the ins and outs so you have a solid base to start from.

**Problem:** How can I tell if an older driver is causing my computer problem?

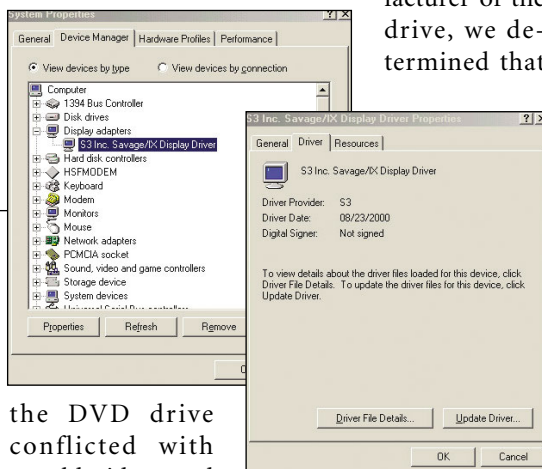
**Solution:** Investigate before you update.

There are two types of system changes that might require you to update a device driver: the installation of a new software release or the installation of a new hardware device. The older your system, the more likely it is that you will need to install an updated driver because new software and hardware are often tested only with the latest device drivers.

Unfortunately, it isn't always easy to determine which device driver to update.

We recently installed a DVD drive on our computer. After installing the device and rebooting, our computer screen went blank. After several hours on the phone with the manufacturer of the drive, we determined that

The System Properties dialog box lists your computer's devices and the driver for each one.



the DVD drive conflicted with an old video card driver. We updated the video card driver, and it solved the problem.

The moral of the story: If you are experiencing a problem with a device, the problem may not be with that device's driver. You may actually have to update the driver of a different device. Conflicts with video drivers are among the most common occurrences. Such conflicts aren't always logical, but they occur all too often.

If you're having a problem with a device after installing new software or hardware, the best way to investigate the problem is to visit the software or hardware manufacturer's Web site and look through the support forums. You're probably not the first person to have experienced these problems. If there aren't any support forums, contact technical support for assistance.

**Problem:** I can't find information about the current driver.

**Solution:** Use the Device Manager to identify the device make and model and driver date.

Before you can update a device driver, you must navigate to the Windows Me Device Manager to identify the make and model of the device that is installed on your computer and the date of the current driver. Right-click My Computer, click Properties, and select the Device Manager tab. Click the plus sign (+) next to the device type to display the actual device. Double-click the device and then click the Driver tab. Do *not* click the Update Driver button at this point. Write down the device make and model and the driver date. Click OK and click OK again to exit the Device Manager.

**Problem:** I don't know how to find an updated driver.

**Solution:** Use these sources of updated drivers and use them in the specified order.

Once you've determined the make and model of the device needing an updated driver, the next task is to find the latest device driver. This is not as straightforward a task as it seems.

If you purchased your computer from a major manufacturer, such as Dell, HP/Compaq, or Gateway, the safest way to find the latest device driver is to go directly to your computer manufacturer's Web site. This is because device manufacturers often develop drivers to the computer manufacturer's specifications.

For example, you should only use Dell-supplied drivers for the Dell OEM (original equipment manufacturer) version of SoundBlaster audio cards. The Dell OEM version of SoundBlaster cards is built to Dell's specifications and has some functions that the retail version doesn't have. Conversely, the retail version has some functions the Dell OEM version doesn't have.





Similarly, ATI Technologies' video drivers won't work for the Dell's OEM version of ATI video cards.

Gateway goes so far as to post a warning on its driver download page, stating that drivers posted on its Web site have been tested and certified for computers Gateway sold. The warning goes on to state that "although component vendors offer additional drivers on their Web sites, Gateway neither warrants installation nor supports drivers outside the Gateway site."

If a mom-and-pop shop or a company that does not provide device drivers on its Web site built your computer, the best place to find a device driver is on the device manufacturer's Web site. For example, if you need to update the driver for an NVIDIA video card, you could go to <http://www.nvidia.com>, click the Download Drivers link, and search for the driver for your specific video card.

If you are unable to find the driver on the device manufacturer's Web site, there are several third-party Web sites that provide device drivers. However, you should only use these Web sites as a last resort. Charles Simmons, president of iCentric, which operates DriverGuide.com, states, "We agree that users should always check the Web site of the manufacturer of their computer or device first for driver updates. Companies like Gateway have tested drivers against their own configurations to ensure success." He adds that "if you use a third-party driver Web site, make sure that the drivers are tested for viruses and errors and that the Web site has a user rating system."

Chances are you will only have to use a third-party Web site if you have an old machine and the device manufacturer has either gone out of business or no longer provides the driver for your particular device on its Web site.

Verify that the driver is newer than the one currently installed. Try to only use drivers that are certified by Microsoft's WHQL (Windows Hardware Quality Labs) to ensure compatibility with Windows OSes (operating systems). Certified drivers are also referred to as signed drivers because they have a digital signature that proves certification.

If the updated driver has release notes, read them to see if the driver is likely to solve the problem you are having.

Download the driver per the Web site's instructions and store it in a folder on your hard drive.

**Problem:** I've heard that driver updates sometimes create problems instead of fixing them. How can I protect myself?

**Solution:** Use the System Restore feature or back up your hard drive before updating a driver.

Should an updated driver render your system unstable, you will want to be able to restore your system to its previous condition. Windows XP added a driver rollback feature that enables you to do this easily, but with WinMe, you should either use Windows' System Restore feature to create a restore point prior to installing the driver or use a drive-imaging tool such as Norton Ghost or Acronis True Image 7.0 to back up your entire hard drive or system partition.

**Problem:** I don't know how to install the driver I just downloaded.

**Solution:** Use the WinMe Update Device Driver Wizard.

Click the Update Driver button in the Update Device Driver Wizard (click the plus sign next to the hardware category, double-click your device name, and click the Driver tab). In the next window, do not click Automatic Search For A Better Driver unless you have been unsuccessful in finding a driver using any of the methods we described earlier. This option searches the Windows Update Web page for a better driver. You don't need to do this if you have already located and downloaded the updated driver. Instead, click Specify The Location Of The Driver.

In the next window, click Browse and search for the location on your hard drive

where you stored the updated driver. Then click Next and follow the instructions for installing the driver.

You must restart your computer for the new driver to take effect. After rebooting, test your system to make sure it is functioning properly with the new driver. Test all devices on your system, including external devices. If your system is not functioning properly, you can restore the old driver either by using the System Restore point or hard drive backup you created. ■



**The Update Device Driver Wizard helps you to locate and install the drivers you've downloaded.**

BY ALAN LUBER

## Haptics Make It Happen

**Y**our brain processes more information than sight and sound. A large part of the brain is devoted to processing sensory information (such as touch, temperature, and pressure) received from mechanoreceptors all over your body. It's one thing to see a tree, but it's another thing to feel its bark and sense its girth by wrapping your arms around it. Our sense of touch is a crucial element in our sense of reality. A computer only produces sight and sound. Although today's PCs can render complex scenes of extraordinary beauty and high-fidelity sound, users are left feeling flat. Haptics is the study of touch, and leading companies such as Microsoft, Logitech, and Immersion are bringing that dimension to our computing experience.

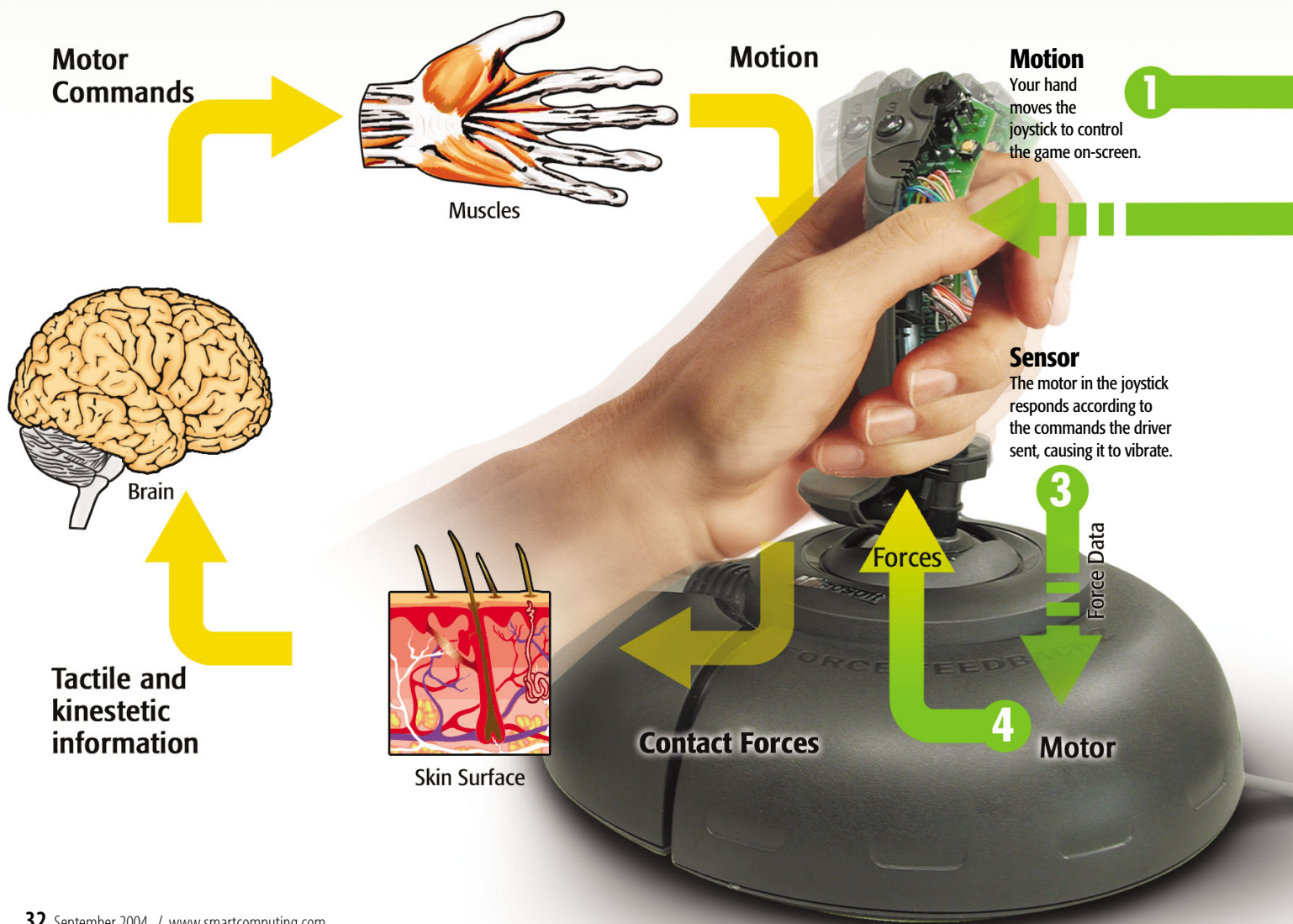
### Bringing Robotics Home

Haptics involves kinesthetic and tactile feedback. Kinesthetic (or force) feedback involves contours, shapes, and sensations.

Force feedback devices work the muscles and tendons that give users the sensation of applied force. Logitech's and Microsoft's force feedback joysticks and steering wheels are key examples of kinesthetic feedback. Users feel the resistance of steering a damaged car around a racetrack or sense the shock of a missile impact. In 3D virtual reality settings, kinesthetic feedback provides the sense of weight when lifting a virtual rock.

Tactile feedback is more subtle, simulating surface sensations such as heat and texture, as well as vibrations and bumps. Tactile feedback devices are employed when a user is actually in contact with a virtual object. Kinesthetic feedback gives weight to the virtual rock, but tactile feedback might give the rock a rough surface with sharp freshly quarried edges.

In practice, force feedback is elegantly straightforward. Logitech explains that implementing forces in a program is similar to implementing sound effects. When your virtual car hits a wall, the program understands the collision condition and produces a corresponding sound effect. With haptics, the





program also sends an effect command to the haptics driver on your PC. The driver interprets and relays the command to a device. Once a device receives the commands, an internal processor translates the commands into motor and actuator signals creating the sensation of force.

Although the best examples of kinesthetic systems accommodate haptics from the ground up, force feedback can also work with programs not designed for it. Logitech says that a background app can intercept data representing pointer position. When the pointer reaches a target area in the window, a force command is produced, bringing touch to the Windows Desktop and apps not actually designed for haptic responses. Although system requirements for haptics devices and software vary, they don't typically demand substantial resources.

## Beyond Gaming

One application for haptics is in gaming. Force feedback devices add a sense of feel to the visceral thrills of flight and driving software. Today's gaming products can simulate the feel of explosions, crashes, and so on. But gaming is only the beginning for haptics in human interface design.

Haptics is also bringing touch into everyday computer interfaces such as the Windows Desktop. Logitech's iFeel MouseMan lets the user "feel" events within Windows apps

and browsers. The iFeel mouse produces tactile sensations as the pointer travels over icons, menus, folders, and Web buttons. Adding force feedback to the Desktop lets users see and "feel" the buttons in applications such as Calculator.

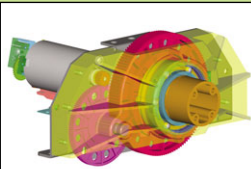
Automotive, industrial, medical, and simulation markets are taking a keen interest in haptics. The BMW 645Ci uses haptics to provide feedback in its controls, telling the operator how far and fast the knob has turned. Although a mechanical detent can achieve this effect, a haptics system can alter the effects.

The medical industry is also a market for haptics. By simulating the movements, resistances, and feel of a human body, haptics can improve the quality of medical training. Haptics-based training simulates the physical sensations of using a scalpel. 3D simulation is another player in haptics development. These interactions let designers pick up, assemble, walk through, and refine their designs. As technology evolves, artificially created tactile sensations will increase in sophistication, usefulness, and desirability, making haptics a vital part of human interfaces.

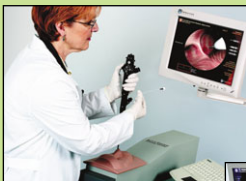
**2 Driver**  
The device driver interprets these movements and sends instructions back to the joystick.

## Position Information

### More Examples Of Haptics



This transparent view illustrates the internal mechanism behind Logitech's Driving Force wheel. (Courtesy of Logitech)



The medical industry is using haptics to simulate the movement and feel of the human body to improve medical training. (Courtesy of Immersion)



Cars such as the BMW 645Ci are incorporating haptic controls, allowing drivers to keep more attention on the road. (Courtesy of Immersion)



Cell phones typically vibrate with a single force and speed. High fidelity haptics brings a range of frequencies, dynamics, and crispness, making cell phones easier to use. (Courtesy of Immersion)



Logitech's Cordless Xbox Controller offers force feedback for a wide range of games. (Courtesy of Immersion)



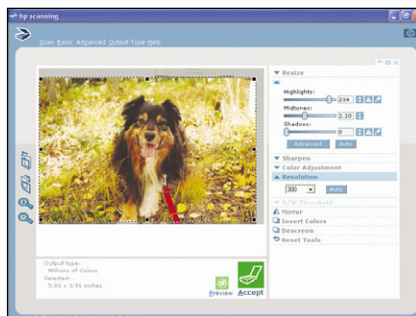
# This Isn't Your Father's Scanner

Put This Versatile Device To Work For You



WOULD YOU LIKE AN INEXPENSIVE, yet powerful tool that can transform your documents, emails, and PowerPoint slides into dynamic presentations? A tool that can help you organize, archive, and share decades of old photographs? A tool that makes it easy to create personalized calendars, note cards, and business materials?

There's a good chance you already own this valuable tool. It's a scanner,



Scanner software, such as this HP product, helps you make adjustments to the image or document before you scan.

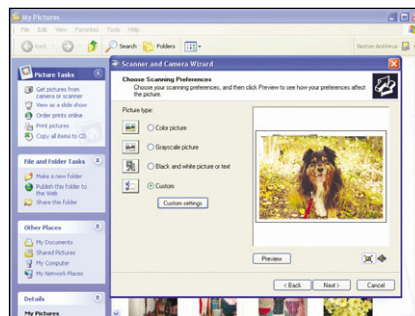
and today's scanners perform digital magic. With features such as color correction, 35mm film scanning, and automatic email attachment, a scanner is a cornerstone of digital photography. We'll show you the basics to help you get the best quality images, as well as tips on how to use your images for a variety of creative applications.

## Get Your Best Scan

Before you scan anything, you need to determine what you want to

do with your scanned image. Maybe you'll be sending the scan as an email attachment or you want to make high-resolution color prints. Each of these applications requires a different scan of the same image. The reason is resolution.

Let's take a minute to examine resolution. One of the most useful ways to express resolution of digital images is in pixels. Your computer monitor

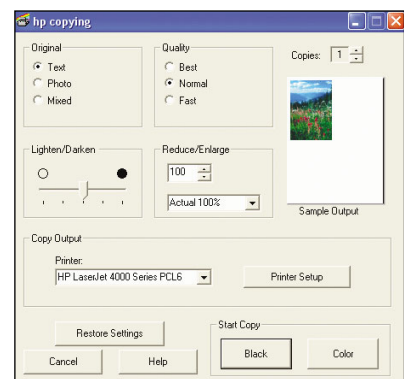


Windows Me/XP include image-scanning software.

displays pixels and measures resolution in ppi (pixels per inch). In contrast, your inkjet printer prints images in dpi (dots per inch).

To print photographic quality output with your printer, you need a minimum of 200dpi. That's what the average person sees as reasonable quality in a picture. If you plan to take your final output to a commercial print house (perhaps for wedding invitations or copies of a business plan), 300dpi is common. You can get away with lower dpi if you're putting a picture into an email or PowerPoint presentation.

Higher resolution also translates into larger file sizes. In fact, when you double the resolution, you quadruple your file size. If you scan an 8- x 10-inch photograph at 300dpi, you'll end up with a fairly hefty 10MB file. Scan this same image at 600dpi and you have a 40MB file. High-resolution images take up more space on your hard drive and occupy more memory when you are viewing or working on



Most scanner software lets you make copies from documents.

them, which could result in slow or erratic performance.

## Windows Image Acquisition

Windows Me/XP include WIA (Windows Image Acquisition), which makes it easy to scan images. All you need is a WIA-enabled scanner with a USB (Universal Serial Bus) connection. You don't have as much control over the image as you would with your scanner's software, but this is the

quick-and-dirty method. After you make sure your scanner is connected to your PC and all of the proper drivers are installed, place the image you want to scan face down on the scanner. Go to Start, My Pictures, and click Picture Tasks and Get Pictures From A Scanner Or Camera. Click Next when the Scanner And Camera Wizard launches. Click Preview. Click Custom Settings to adjust brightness, contrast, and resolution. Click Next, type the name of the picture, select a file format from the drop-down menu, and choose where you want to save the file. Click Next.



Here is an example of a picture that we scanned directly on the flatbed scanner.

### Scan A Document

Let's assume that you find a great article in a magazine or newspaper and want to scan it. Remember that copyright rules apply to most published works. If you're not sure how you can use a scanned image, check out the United States Copyright Office Web site (<http://www.copyright.gov>). Assuming you can legally scan and use an image, there are a few tips you need to keep in mind. All printed images have been printed with screens, meaning the images are made up of dots. If you scan it normally, you'll end up making this dot pattern look even worse. This is where you want to use a descreen tool if your scanner's software provides it.

You will find occasions to scan documents that contain images and text. Maybe your daughter's team wins an important match, or your company publishes a newsletter that features a project you worked on. You have two options: You can save the combined text and graphics as an image file or you can save the text and graphics in a manner that lets you use and edit the text in a word processing program.

If you save the article as an image file (JPEG [Joint Photographic Experts Group], GIF [Graphics Interchange

Format], or TIFF [Tagged Image File Format]), you will have a picture. You can print this picture, but you can't change the text or move graphics. If you save the same article as editable text with graphics, you will be able to edit text and move graphics. Depending upon your scanner's software, you may be able to save the image as an Adobe Acrobat, Microsoft Word, or WordPad or other file format that enables manipulation of both the images and the text. Your scanner's software should offer options for saving your scans in different file formats. Check your users manual for details.

Adjust the dpi with your output and application in mind. Most scanner software also has controls to adjust contrast, sharpness, and color. Unless you are trying to achieve a special effect, use the default or auto adjustment for each of these settings. The goal is to create a scan that closely approximates your

original image. Then, you can use an image enhancement program such as Microsoft Picture It! (\$49.95; <http://www.microsoft.com>) or Adobe Photoshop (\$649; <http://www.adobe.com>) to make adjustments.

### Special Effects & Beyond

Today's scanners offer a myriad of special features. The mirror option flips your image left to right (or visa versa). Invert colors converts white areas of an image to black and black areas to white. With color images, each color is converted to its complementary color. As previously mentioned, you can also achieve these special effects after a straight scan with

other image manipulation programs. Nearly every new scanner offers these sorts of options.

**A home copier.** If you have a home office but no copy machine, don't sweat it: There are two ways you can use your scanner to make copies. One way is to scan a document and then print copies. This is a rather time-consuming process, especially if you have multiple pages. There's a good chance your scanner software has a copy function. You can make additional adjustments such as reducing or enlarging the image size, improving the quality of the copy, lightening, and darkening. If your document has multiple pages, a document feeder can help (not all scanners accept document feeders). The advantage is that you'll get the output you want without having files saved on your hard drive.

**Scanning 35mm slides.** Most everybody has 35mm slides and negatives lying around. Even digital camera users sometimes revert to using a 35mm camera on certain occasions. With a film adaptor (many scanners have them built in), you can create digital images and files from images your 35mm

Uses For Your Scan	Suggested DPI
Email attachment .....	50 to 100dpi
PowerPoint slide .....	100 to 200dpi
For a document or calendar.....	200 to 300dpi
High-quality photo reproduction .....	300 to 1,200dpi

camera originally captured. The scanner automatically converts negatives into positive images. The 35mm adapter is usually built into the lid of the flatbed scanner. It often has its own light source that illuminates the film as it scans. Insert your film, close the scanner lid, and begin your scan. Epson offers a series of scanners called Perfection, HP has its Scanjet series, and Canon manufactures a series of CanoScan film and photo scanners, all with built-in 35mm film strip adapters. Prices range from \$79 to \$599.

**Email.** We all use email. And you probably enjoy sending pictures to friends, family, and colleagues. Your scanner software may have a feature that both saves the scanned image as a file that is appropriate for email (a small file size between 50KB and 150 KB) and automatically launches your email program.

### Scanning In Action

The best part of scanning is that there is no limit to the things you can do. You've got pictures. Lots of them. You have slides, prints, and negatives, not to mention family heirlooms, Polaroids, and snapshots. Start scanning. As you save files, sort them into folders for easy reference.

A great way to share your scanned images is to create a calendar. There are a number of calendar-creation programs available. Even if you just have Microsoft Word, you can easily make a calendar with your own pictures. To do so, go to File, New, and Other Documents. Select Calendar Wizard. Select the style, direction, picture (make sure you leave room for a picture and date range). Select Insert, Picture, and From File. Locate your photo and insert it in the calendar.

You can also insert scanned images in letters, marketing brochures, and business proposals. Personalize PowerPoint presentations with scanned images. At any slide, simply go to

Insert, Picture, and From File and find your image.

### Fine-Tune Your Scanning

Here are a few suggestions and ideas that should improve your scanning techniques and get your creative juices flowing.

**Choose the correct image file types.** When you create an image file from your scan, it will be saved in a specific file format, such as JPEG, TIFF, or GIF. JPEG files produce small file sizes that are great for email, Web pages, and small prints. JPEG files use lossy file compression, which means they tend to lose image details. What's worse, every time you manipulate and resave a JPEG file, you increase the loss.

TIFF files are lossless, meaning no information is lost. They create larger file sizes, but TIFF is perhaps the best file format for high-quality scans that you want to use for prints.

You can also read and write GIF files numerous times without additional loss in quality, as GIFs are lossless. GIF is limited to 256 colors, so it's best used for logos or pictures that contain fewer colors.

**Clean the glass.** To get the best possible scan, you want to have clean glass. A speck of dust or a fingerprint can make even the best scan look ugly. Don't use a commercial glass cleaner because they contain abrasives that can scratch the surface. Use a professional quality lens cleaner or make your own solution, but always check your user's manual to see what the manufacturer recommends. Apply the solution (combine one drop of dish soap, 4 ounces of water, and a half ounce of rubbing alcohol) with a clean, lint-free cloth and let it air dry. Omit the rubbing alcohol if your scanner's glass has a protective coating (again, check your manual).

**Update scanner software.** Check the scanner's manufacturer's Web site to locate any driver or software updates

that may improve the performance of your scanner.

**Use the correct image orientation.** Place the image in its proper orientation on the scanner's glass. You can lose detail when you rotate images in image-editing programs.

**Scan only what you need.** If you only need to use a small portion of an image, use the crop function to mark this area for scanning. You'll save yourself some editing time and reduce the file size.

**Scan images for the Web.** Most Web pages incorporate images that are either JPEG or GIF files. Because Web pages require small file sizes in order to download quickly, your best bet is to create 100dpi JPEG or GIF files.

**Create a collage.** You can spend hours digitally manipulating an artistic collage of images. Or, you can cut and paste your images on a piece of paper and scan the result.

**Scan 3D objects.** Sure, it's called a flatbed scanner, but that doesn't mean you can't scan 3D objects. Remember when you copied your hand on a copy machine? The light from the scanner is designed to get the best image at the surface of the scanner (where the glass is). But a flatbed scanner can create 3D-looking images when you scan objects. These include flowers, leaves, small tapestries, and, yes, your hand. Be careful, though; you don't want to put anything on the glass that could scratch the surface and ruin future scans. Consider placing a protective layer (such as clear plastic) on top of the glass, and leave the scanner lid open.

### I Think I Scan

With the tips we've provided, you should be able to get the most from your scanner. So delve into those boxes of slides, pictures, and newspaper clippings and start using your scanner to showcase your accomplishments. ■

BY BILL EAGER



# Gypsies, Beefs & Peeves

**W**ake the kids and call the neighbors! The results of Mr. Modem's highly scientific e-nnoyances survey are in. After reviewing cadres of complaints, piles of peeves, and gazillions of gripes, your irritations generally fell within four categories: spam, hardware, software, and technical support. A representative sampling follows.



It's no surprise that spam secured the No. 1 position as the greatest e-nnoyance. Adam wrote, "I hate spam. I HATE IT! On any day I might receive 300 or 400 messages selling everything from body-part enhancements, to herbal remedies, to credit repair. But worse than those types of ads are the ones that are obscene—some with pictures, others with really offensive subject lines. My kids and my parents use email. I really resent the fact that spammers can shove this stuff in my face."

Intrusive advertising on Web pages got Laura's cables in a knot: "I absolutely hate action or animated ads on pages that make it nearly impossible to print. There's nothing worse than seeing my paper and expensive ink wasted on some stupid ad that prints out instead of what I'm trying to print." Tell it like it is, girlfriend!

The need for so many protection programs was another hot-button issue. Betsy summed it up quite nicely: "My gripe is all the programs I have to install to protect against pop-up ads, viruses, spyware, and other mumbo-jumbo stuff that's waiting to get me. So I buy the programs and my computer is scanned, defragged, patched, firewall protected, fluffed, and buffed. I spend more time doing maintenance items on my PC than I do actually using it."

Windows Updates strike a common chord, as well. Leigh had a few thoughts to share with Mr. Gates & Company: "My pet peeve is Windows patches and updates that louse up my computer. I'm tired of Microsoft labeling everything as a 'critical' update. Come on, Microsoft: Either get it right the first time or acknowledge that we're all beta testers and give us the software for free." Amen, Sister Leigh!

Helen expressed the feelings of many of you regarding OSTs (Offshored Tech Support) complaints: "I bought a new computer from a large company that will remain nameless other than to say it's been a Dell of an experience. When I needed help, I called their tech support number. After being on hold for 24 minutes, I was connected to somebody in India. I couldn't understand what the person was saying. After 10 minutes of pure frustration trying to

understand the person, I ended the call. I know it's cheaper for companies to hire people in other countries, but is it asking too much to require them to speak understandable English if they're going to be manning the phones?" No, it's not asking too much, Helen.

Many of you want to be left alone with your computer and your software and complained about the seemingly endless stream of new versions of products. Tammy best captured your sentiments: "I know technology has to continue to evolve, but do companies have to keep churning out updated versions every 10 minutes? It seems like I just get a program installed when the next version comes along. I love *Smart Computing* and I enjoy computers, but the fun is really going out of it for me, and I have a feeling that I'm not alone. Thanks for asking, Mr. Modem."

Lastly, a survey of e-nnoyances wouldn't be complete without a few complaints about e-spellings. "I'm sick and tired of e-voting, e-reminders, e-banking, e-picnics, e-everything," said Bill via email. I agree, Bill. e-nough is e-nough.

Thanks to all of you who took the time to share your gripes, grievances, and many kind words about *Smart Computing* and Mr. Modem's column. When it comes to e-nnoyances, I feel your pain. If there's any comfort to be derived from an exercise of this type, it's the comfort of knowing that we're all in this crazy computerized world together.

I've been around computers for 25 years, and from that perspective, the best advice I can offer is to be patient. These are the good old days of this technology. The gripes and gremlins we have to endure today will be our charming war stories in the years ahead. Just as many of us ol' timers delight in regaling newer computer users with tales of 300bps (bits per second) modems, primordial monochrome monitors, and PCs without hard drives, so will we someday find humor in spam, viruses, and spyware. When it comes to the continually evolving world of technology, trust me on this one: The best is yet to come. ■

BY MR. MODEM

Mr. Modem (Richard Sherman) is an author, syndicated columnist, radio host, and publisher. "Mr. Modem's Weekly Newsletter" provides personal responses to subscribers' computer and Internet questions, plus weekly computing tips, Web site recommendations, virus alerts, hoax warnings, and more. For additional information, visit <http://www.MrModem.com>.

# Eye On Books Is A Literary Bonanza For Your Ears

Site Features Author Interviews That Come Alive Online

DID YOU KNOW THAT E.L. Doctorow never really thought of himself as a story writer? Or that Scrooge McDuck inspired Janet Evanovich to create a series of popular mystery novels? Or that one of the biggest challenges for Pulitzer Prize-winning cartoonist Berkeley Breathed is to find out who Opus really is as a character?

You could have known all of this and more if you visited the Eye on Books site (<http://www.eyeonbooks.com>). Eye on Books isn't your typical online book site; it doesn't contain reviews (the closest you'll get is a sentence or two about a particular work), and it doesn't feature best-seller lists. Instead, it's the ultimate writer interview site online. Eye on Books, the creation of radio personality Bill Thompson, contains more than 900 audio interviews with writers who discuss their latest books, the art of writing, and numerous other writing-related topics. Authors run the gamut from politicians, sports writers, novelists, and more, but they all have one thing in common: They speak openly and interestingly about their work.

The Eye on Books site makes this clear right from the start. When you first visit the home page, you'll see short text descriptions of books by featured authors in the middle of the page, and below that, you'll see covers of books by the most recently interviewed authors. On the left side of the page are the navigation links: How To Use Eye On Books, Search Interviews, The Hot Ten, The Writer's Craft, The Spoiler Room, Photo Gallery, Merchandise, Contact Us.

and Contact Us, followed by a list of upcoming interviews and some advertising. On the right side of the page, you'll see other special features.

## The Main Plot

The heart of the site features the author interviews, so we'll begin there. You can go directly to an interview featured on the home page by clicking any of the book covers, or you can see more of what the site has to offer by clicking the bright green Search Interviews button in the navigation bar on the left. This button really could have been titled Search And Browse Interviews because the site not only lets you search by keyword, but it also lets you browse by genre, author, or book title.

Let's start by choosing an author from the alphabetical list. We randomly select

a letter and scan the list of names. The name Dick Armev looks interesting (when we think of authors, we tend to think of those who make a living out of writing rather than those who have made their names elsewhere and written books on those experiences), so we click it and select his latest book, "Armev's Axioms." We find out that he is indeed the same person who was once the House Majority Leader. The interview description says, "Now retired, Armev has written a book of advice and opinion that he says is useful not just for politicians, but for all of us."

It sounds intriguing, so we locate the audio player just below the author description and book cover. This green box tells us the interview is six minutes and 23 seconds long, and to hear the interview, all we need to do is click the "play" arrow. We do so, and soon Armev is describing his primary agenda in writing the book (to take serious subjects and treat them with good humor) and his two hidden agendas (to gently persuade others about his religious beliefs and to demonstrate one can write a good book without trashing former colleagues). If the audio player doesn't appear in your software, simply click the Don't See A Player Here/Click Here To Listen link, and the site will attempt to search your PC's hard drive for another audio program through which the interview will automatically play.

After you listen to an interview, look below the interview box to find other recommendations. Thompson places related interviews in a box titled Similar

Begin here, to find the interviews you want to hear.

**Alphabetically by author**  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

**Alphabetically by book title**  
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- History
- Home & Garden
- Horror
- Literature & Fiction
- Medicine
- Mystery & Thrillers
- Nonfiction
- Parenting & Families

**By keyword**  
Tip: Do not put your search terms inside quotation marks.

Photo Gallery • The Writer's Craft • The Spiller Room  
About Bill Thompson • Merchandise • Home

Computer, Tech, Gurus, Jobs  
Interviews, culture, compensation, hiring  
and the creative space here.

\$100,000 - \$500,000 Jobs  
Want job interviews? We'll show you  
how, so you'll be a top candidate.

**STORYLINE**  
Book & Beauty  
Amy Poehler  
Shocking Down the House  
Ben Feltch

**You can search for interviews by author name, book title, keyword, or genre.**

Interviews You'll Enjoy, so you can click, for example, "How Ronald Reagan Changed My Life" to find out how former speechwriter Peter Robinson was influenced by our nation's 40th chief executive. Or, if you want to browse other interviews in the same category, you can click the more general links that Eye on Books provides.

For our next adventure, let's try searching for another type of book: a mystery. Click the Search Interviews button on the left to return to the main search page and select Mystery & Thrillers from the By Genre drop-down menu. Eye on Books divides this category into several subcategories, so we decided to try out Police Procedurals. This area contains the type of books we expected—"Last Car To Elysian Fields" by James Lee Burke and "The Falls" by Ian Rankin, for example—and we select "Chosen Prey," the 12th novel in John Sandford's "Prey" series.

As with the Dick Armev interview, this page includes a short description, the book cover, an audio player, and related links. Plus, there are additional sections: One is the author's photo; the others are related links categories. John Sandford has his own home page online, and, as with many writers on this site, you can click the Author Website link to find out more. And, just beneath that link sits a link next to The Writer's Craft, which brings us to the next big benefit of Eye on Books: discovering what makes various writers so successful.

## The Inside Scoop

The Writer's Craft is a special section of the Eye on Books site devoted specifically to interviews in which the author discusses a topic related to writing, in general, rather than a specific book. You may have wondered where writers get their ideas, or what their backgrounds are, or how much of friends, families, and acquaintances make their way into novels. Thompson has conducted several hundred interviews on these topics and more, and you can treat yourself to these gems in The Writer's Craft section.

Start by clicking The Writer's Craft link or button from the left navigation bar, located on the home page or throughout most pages of the site. Toward the middle of the page, you'll see a handful of featured interviews, typically those most recently added to the site. For instance, a description of an interview with Elizabeth Peters notes, "You may have heard it said that in a mystery, plot comes first, with characters a distant second. But for Elizabeth Peters, aka Barbara Mertz, aka Barbara Michaels, characters always come first." And, an interview with E.L. Doctorow shows that he adheres to Elmore Leonard's tactic of "leav[ing] out the parts that people skip." Each featured interview description lists the length of audio, usually ranging from two to seven minutes, and clicking a particular link takes you directly to that author's Writer's Craft interview.

Scroll down a bit below the featured interviews, and you'll find an alphabetical list of all the authors interviewed for this section. Some names are well-known, such as Dave Barry; some are less familiar, such as China Miéville (no offense meant to fans of this talented fantasy writer); and some are just plain unexpected, such as Stan and Jan Berenstain (yes, the authors of nearly 300 popular children's books about the Berenstain Bears).

If you're looking for interviews on specific topics, however, you'll be best

served by scrolling down just a bit further. Eye on Books organizes these topics into categories, including Plotting, Characters, Research, The Evolving Writer, Challenges To Writing, Inspiration And Motivation, Getting Started, and more.

For example, take a look at the Characters section. You know that Charlie Brown will always be a child and that Blondie and Dagwood haven't aged a day, but fiction writers must answer the question: How will your main character age? Lawrence Block chose a couple of approaches. He made one of his main characters, ex-cop Matthew Scudder, his own age so Block would have an easier time keeping track of his age, whereas another character, Block's lovable burglar with a heart of gold,

## Tips For Using Eye On Books

- **Get random.** You never know what you'll find at Eye on Books, especially if you click the Go To A Random Eye On Books Interview link on the home page. You might land on an interview about "The Hatweaver's Lesson" (Yolanda Joe's book about an ambitious woman who gets life lessons from her wise grandmother), but chances are you'll probably land somewhere else as equally unpredictable.
- **Sign up for the email newsletter.** Every other week or so, Bill Thompson, the site's creator, publishes a newsletter that contains details about the newest interviews he's posted to the site, book release information, and more. Click the Eye On Books EXTRA link on the home page to sign up.
- **Check out The Hot Ten.** Want to know which are the most frequently listened to author interviews? Click The Hot Ten link on the home page to hear the most popular interviews on the site. ■



Bernie Rhodenbarr, stays the same unspecified age forever "and clearly fails to learn from experience."

### (Don't) Spoil It

Block, like other mystery writers and most other novelists, has found that interviewers typically won't ask authors about the endings of their books. After all, the author doesn't want to give away the most satisfying part of the book. But sometimes the most intriguing questions for a reader can be answered only by discussing a book's ending. Why did the author kill off his main character? How did that plot twist occur? When did the writer realize she had no other choice than the ending she came up with?

Welcome to The Spoiler Room, a part of the site where authors discuss their books' conclusions. As the name implies, listening to these interviews can spoil a book for you if it's on your to-read list, but if you've already read a book, The Spoiler Room is a great place to go for insight and information.

Click The Spoiler Room link on the navigation bar and browse the titles. If you find one you want to know more about, click the interview link. But be warned: The short description of the book on this page may also contain a

spoiler, so be careful when scanning the list of titles or risk learning more about a book than you wish to know.

### In Color

If The Spoiler Room doesn't appeal to you, another section of the site you're sure to find interesting is the Photo Gallery. Most authors include their photos somewhere on their books, even if it's merely a thumbnail shot on the inside back flap, but that may not satisfy a reader's curiosity about what an author really looks like. Eye on Books' creator, Thompson, has his photo taken with many of the authors he interviews, and now you can view those snapshots online in the Photo Gallery.

Click the Photo Gallery button or link in the navigation bar, and you'll see the first of 10 or so pages, each filled with head shots of about 20 authors, sorted from the most recent to the oldest photo. Click any of the photos for a larger picture, often with the author standing next to Thompson. If you're searching for a particular author, click Sort By Author Name at the top of each page. In this section, you'll find photos of, just to name a few, Jay Leno, Maya Angelou, and Terry Bradshaw. (And yes, we also would like to know what the Hall of Fame Pittsburgh Steeler is doing wearing a Los Angeles Dodgers baseball cap.)

### The Denouement

Spend some time with Eye on Books, and you'll find answers to such questions as why E.L. Doctorow never really thought of himself as a story writer. (It's because he sees himself as a novelist, which, he says, is something else altogether.) You may even find answers to questions you didn't know you had. Fortunately, Eye on Books' creator, Thompson, knew he had lots of questions, and we think you'll find the authors' answers to these questions as fascinating as he did. ■

BY HEIDI V. ANDERSON

#### FACT SHEET

### Eye On Books

"Sooner or later everyone writes a book, and sooner or later everyone comes to Washington, D.C.," says Bill Thompson, creator of Eye on Books. Thompson is a radio personality who lives in the nation's capital, and thus, he says, it was only natural that he should gravitate toward interviewing authors about their latest books. And, he adds, it was only natural that the authors ask him when their interviews would be aired. But with Bill's syndicated show appearing on hundreds of stations across the country, he had no idea where the authors could listen to the finished product.

So, the idea of Eye on Books was born. In the spring of 2000, Thompson began posting these interviews on a Web site for the authors to listen to. He says it took him "about five seconds" to realize that authors weren't the only ones who would be interested in this type of content. So, he started the free site and is proud of the fact that many of his visitors come from school and library computers.

The site's focus hasn't changed significantly since its inception, at least in the eyes of the visitor, but it has changed a great deal behind the scenes. At first, Thompson (who is the only person who works on the site) was adding interviews to the site manually. He would post interviews online using basic HTML (Hypertext Markup Language) coding. But as you can imagine, as the archive grew, so did the amount of work involved in creating it. About eight months ago, Thompson picked up a few "Dummies" books and learned how to build a database so he could create the site's pages more easily and load them more quickly.

One page that hasn't loaded yet, however, is the one devoted to Steven King. Thompson has yet to interview the horror writer, and he calls him his "No. 1 most wanted author." ■



The Photo Gallery shows your favorite writers in casual settings.



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# Cut The Ties That Bind

## Wireless Internet Steps Up

WIRELESS INTERNET ACCESS is rapidly becoming a necessity for some and a possibility for everyone. In hotels that cater to business travelers, odds are good you'll find a wired broadband connection in each room. Typical hotel broadband connections offer speeds of 300Kbps (kilobits per second) to 700Kbps. If you are in a lower-tech hotel, your options will be limited to dial-up connections, which typically offer speeds of 28Kbps; ISPs (Internet service providers) and modem manufacturers tout higher modem speeds, but they're rarely achieved.

But if you want to go online outside of your hotel room or get better performance than the dial-up connection in your room, there are several alternatives that enable you to connect to the Internet while on the highway, in a picnic area, at an RV park, or in your hotel room.

### The Particulars

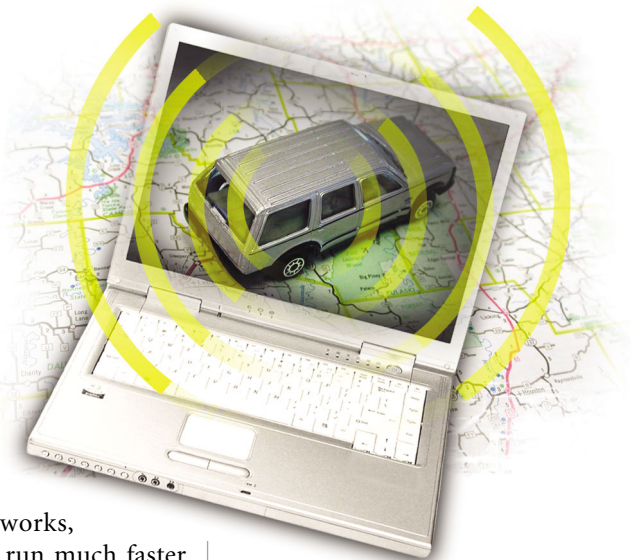
One of the best access solutions is the next generation of wireless

Internet services. Wireless telephone companies provide this service using their cell phone networks, but the connections run much faster than older 14.4Kbps cell phone modems. While most Internet wireless is not as fast as hardwired broadband connections, wireless is often faster than dial-up and can provide backup connectivity when hardwired broadband fails or is unavailable. Sprint (<http://www.sprintpcs.com>) and Verizon (<http://www.verizonwireless.com>) are among the wireless vendors that provide this service. Next-generation Internet wireless delivers an average of 40Kbps to 60Kbps and up to 144Kbps when conditions are favorable, compared to about 24Kbps as a typical dial-up speed and anywhere from about 175Kbps to 700Kbps as speeds typical of DSL.

Wireless access frees you to engage in all Internet activities, from browsing and email to remote business access and investment tools. Mazelle Ablon, the retired president of a manufacturing company, spoke about using wireless Internet access to actively trade the stock market. "We travel by car with three computers, one of which is solely for me to watch the stock market. I can tell you every piece of highway that lacks Sprint

wireless connectivity, but I can also tell you I can watch the market most of the drive from Dallas to Southern California. For me, that's connectivity, and that allows me to stay informed."

Wireless Internet service requires a wireless adapter card for your notebook. This card is not the same adapter used for 802.11b (a transition standard for wireless LANs [local-area networks] that uses the 2.4GHz frequency) wireless networking. Each wireless telephone company has its own PC Cards; for example, Sprint wireless cards will not work with Verizon's network. Each wireless adapter card is essentially a network adapter and miniature cell phone. Just like a cell phone, each card has a unique ESN (electronic serial number; the means a cell phone or PC Card uses to identify itself to the cellular network). Purchase the card directly from your wireless telephone company to ensure you get a compatible model. Installation varies by brand of card and wireless company, but it's generally simple and involves little more than inserting the wireless adapter card into your notebook, installing the connection software bundled with the card, and entering an access code the telco provides.



Slide a wireless adapter card, such as this one from Sprint, into your notebook, and you'll be on your way to wireless Internet access.



## Get A New Plan, Stan

Most wireless telephone companies currently require a 12-month service contract. In the past, Sprint offered month-to-month contracts, but this is no longer available. Unlimited access plans are generally priced at about \$80 a month. There are some service plans that charge a flat fee and then charge additionally by the kilobyte of data you transfer. If you use your wireless service only for occasional trips, it will be cheaper to purchase a lower-cost limited-access plan and pay the kilobyte surcharge as needed.

One of the most important factors to consider when choosing a wireless provider is its service area. Look at a map of the regions each provider's wireless Internet service covers to confirm that the areas you travel receive coverage. Each company's service areas are different, and there are rural locations and small cities where wireless Internet service is not available. Just because a city has cell phone service does not mean that it also has wireless Internet service, so make sure you look at the provider's wireless Internet access coverage and not just its cell phone coverage.

Wireless browsing can be several times faster than other wireless Internet activities, such as file downloading, because of technology wireless companies designed specifically to accelerate browsing. Jeff Adelmann, director of integrated solutions for Sprint, says, "Sprint's use of bandwidth optimization allows speeds to be increased up to two to five times depending on the application and device being used."

## Bumps In The Road

Wireless is not yet a perfect science. You might have reception problems inside some concrete or metal buildings, such as hotels, the same kinds of places your cell phone has problems getting reception. If cell phone reception inside your

hotel is lacking, an external antenna can improve your reception and make the difference between success and failure. Be aware that there are wireless adapter cards that accept external antennas and cards that do not. Never purchase a card that doesn't have an external antenna jack. The ability to use an external antenna is critical in getting the broadest coverage and best speed from your wireless service.

The location of the antenna is one of the most important factors when it comes to connection speed. An external antenna can make all the difference between a good connection and a poor one because it allows flexibility in placement. To work well, the antenna needs to be placed where it will have as few radio signal obstructions as possible. Concrete walls, the metal interior of cars, and other electronic devices can all interfere with radio signals. The stub antenna packaged with wireless access cards often does not work well because the most comfortable location to read your email may not be the best location for cellular reception.

There are many different external antenna models. The best general-use antennas are flat dashboard-mountable models such as the Wilson Stealth (about \$30; <http://www.wilsonelectronics.com>). Be prepared to walk around the hotel room with your antenna and notebook, watching the signal strength display on your computer until you find the sweet spot. The most ideal locations are often near windows. To get the best possible signal, you may have to open the hotel room's window and securely hang the antenna outside. Pack an additional piece of antenna wire with the appropriate connectors for use as an extension cord so that you can run a wire from the antenna's sweet spot to your desired work location.

This same external antenna is very useful in moving or parked cars. Cars are metal cages, and metal adversely affects radio signals. If it were practical

to mount your notebook with its stub antenna on the dashboard above the car's metal door panels, you wouldn't need an external antenna. To use a dash-mounted external antenna, place the antenna on your dashboard and secure it to your windshield with suction cups. This simple mounting makes it ideal for rental cars. The dash-mounted antenna will give improved range and speed over the stub antenna. It will not work as well as a roof-mounted antenna, but the difference is marginal, especially given the problems installing a roof-mounted antenna can present.

A more exotic but useful antenna is the external-mount PCS Panel Model

**The PCS Panel helps you get good reception in remote locations.**



#PC-19013 (\$79.95; <http://www.cellantenna.com>). Although bulkier and more cumbersome than the dashboard model, this highly directional antenna gave us good reception in the middle of the red rock canyons of Sedona, Ariz., and on deserted stretches of coastline blocked by mountains and cliffs. This antenna is an ideal choice for RV owners or those in rural settings. It may be the only solution for resorts that are far from cities or lack cell phone reception. The directional antenna is 10 inches high x 10 inches wide and can be as easily packed as a hardcover book. The antenna needs a portable base and antenna mast. A photographer's 9-foot light stand makes a great portable rig. It folds for travel, and you can quickly set it up.

The key to getting the best performance from the directional antenna is the direction in which it is pointed. Getting it to work is reminiscent of climbing up on the roof of your house to adjust the TV antenna. The challenge is that you need to move the antenna and simultaneously see the signal strength reading on the notebook. Reading a notebook display in bright sunlight or awkward locations can be challenging. You'll achieve the best results if you have a friend look at the screen as you rotate the antenna.

Interestingly, you often do not have to point the directional antenna toward the nearest cell phone tower. Radio waves deflect and bounce around. You can frequently get an excellent signal off-axis or from a more distant tower.

You'll probably have to set up the antenna and stand outside for best reception; be sure to add some weights to the stand's feet if it's a windy day, and do not use it during electrical storms, even if you've grounded it. If your hotel room has a balcony, you can set the antenna there and run the wire through the sliding door; if not, you'll have to get more creative with your mounting

## Wireless Speed Tests

	Dallas, Texas	Phoenix, Ariz.	Sedona, Ariz.	Laguna Beach, Calif.	Albuquerque, N.M.	Santa Fe, N.M.	
Web browsing	162.6	146.3	97.6	133.3	122.0	125.2	Kbps
Upload	37.1	33.4	25.6	29.7	26.7	27.8	Kbps
Download	87.0	86.1	60.9	70.5	67.0	68.7	Kbps
Seconds/MB	92.0	92.9	131.4	113.5	119.4	116.4	Seconds

technique. A 35mm camera clamp mount or camera suction cup mount works well to fix the antenna to a window or ledge. You can also use the directional antenna indoors in front of a closed window or sliding glass door, but you must find a window facing the right direction for signal reception.

So, with directional antennas, your first step is to find a spot outside your temporary abode with the least obstructed view. Then slowly rotate the antenna until you get the best signal strength on your computer. Depending upon the connection management software you are using, you may have to wait 30 seconds or more for the signal strength reading to stabilize before you try the next degree of rotation. The directional antenna rig can require a lot of setup, but when it works, it can deliver faster, more reliable Internet access than slow dial-up, and it's infinitely better than no connection at all. Once you calibrate your setup at a particular hotel or recreational site, you'll likely be able to set up much more quickly on recurring visits.

Internet wireless currently offers, Verizon, the reigning speed champ at the time this article was written, offers an ultra-high-speed wireless service, which delivers average speeds of 300Kbps to 500Kbps with bursts as fast as 2Mbps (megabits per second) when conditions are favorable. This service is currently only available in the greater Washington, D.C., and San Diego, Calif., areas, but the company plans on rolling out service to 30% of its customers by the end of 2004.

Both Sprint and Verizon also offer wireless Internet service integrated with Wi-Fi hotspots, which are wireless access points that typically have a radio range of 300 feet and provide up to 1.5Mbps. This combination provides increased value and performance.

Good reception and constant connectivity are important for those on the go. Wireless Internet service gives you these and more, so you'll always be on top of your game. ■

BY KEVIN BOHACZ

## Other Options

Even with the best antennas and broadest service map, there are places where Internet wireless will not work. But even in these situations, there's still hope via the new lower (than previous iterations) cost but still pricey two-way broadband satellite services, the next step for wireless access.

For those who want more terrestrial speed than standard

## Comparison Of Wireless To Other Types Of Service

Description of Service	Upload Kbps	Download Kbps	Seconds per MB
Average of wireless test results	30.1	73.4	110.9
56K modem observed speed	24.5	25.3	316.2
56K modem practical max	33.6	52.0	153.8
DSL (Digital Subscriber Line)	175.6	713.0	11.2
T1 (Dedicated Line)	1,544	1,544	5.2

# World Wide Watchdog

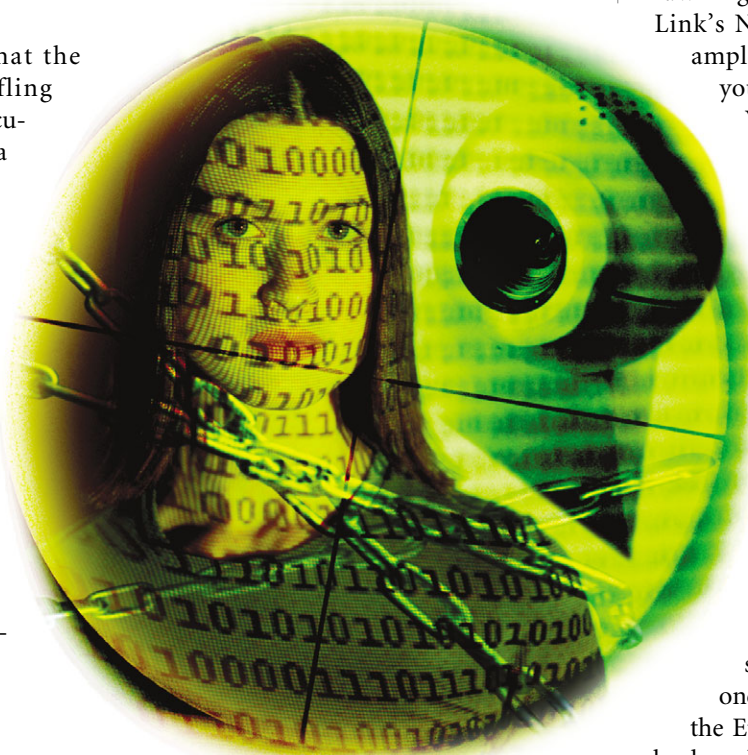
## Use An Internet Camera & Your Internet Connection For Home Security

IF YOU'RE SUSPICIOUS that the babysitter has been rifling through your private documents, an Internet camera might be your solution.

Netcams are Web cameras that include their own Web servers and that you can operate from any remote computer that has Internet access. We'll show you what you need and exactly how to set up a Netcam in your home to watch your belongings, whether you're away at the office or on vacation in Hawaii.

### Some Assembly Required

We recommend using broadband Internet access to connect your Netcam. It's possible to use a Netcam with a dial-up connection, but that method will result in poor video quality. You'll also need to set up a basic network so the camera and your computer can share an Internet connection. For information on how to set up a wired network, subscribers can consult "Your Digital Mansion: Wired Home Network Setup Made Simple" (*Learning Series: PC How Tos*, February 2003, page 62). If you'd prefer a wireless network, see "Cut The Cord: Buy & Install A Wireless Network" (*Smart Computing*, January 2004, page 45).



Before you empty your wallet on a Netcam, consider a few caveats. Don't expect a crystal clear image to fill your monitor. All of the netcams we tested displayed video on about one-quarter of the screen (resolution ranged from 320 x 240 to 1,280 x 960 dpi, depending on the model) with roughly a one-second delay. Another complication to consider: For remote viewing, your ISP (Internet service provider) must allow you to open ports if you are using a router. (Think of this as digging a virtual tunnel through the Internet to access your camera at

home.) When you call to see if this is possible, also ask if your ISP can assign you a static IP (Internet Protocol) address: this will be four unchanging sets of up to three numbers, for example, 192.168.128.11, used to identify any device with Internet access. We'll explain more about opening ports and static IP addresses a little later.

We tested four netcams: the Toshiba IK-WB11A, the D-Link DCS-900W, the Linksys WVC11B, and the Hawking HNC320W. We used D-Link's Netcam as our primary example for this walkthrough, but you'll find that all are similar.

You may find it easier and less troublesome to use a Netcam and other networking hardware from the same manufacturer.

Assembling the camera is an easy first step. With the D-Link, we first connected the antenna to the corresponding connector on the back. Then we assembled the stand for the Netcam and attached it to the camera's base at the corresponding hole. We connected one end of the Ethernet cable to the Ethernet input located on the back and the other end to an open port on the router. Finally, we attached the power adapter to the input located to the right of the Ethernet input. A green light on the D-Link's front will indicate it is powered on.

### Lights, Camera, Access

Once we assembled the camera, we ran Setup Wizard, the DCS-900W's configuration software. Other cameras have similar programs that help you configure your camera. We inserted the installation CD into the CD-ROM drive and clicked Install Wizard and Next once the menu appeared. From



that point on, we simply followed the on-screen instructions.

Note that before using the Setup Wizard, we needed to identify an appropriate local IP address (your device's location on your network) for the D-Link, but some cameras' soft-

ware takes care of this automatically. In Windows XP, we found our router's IP address by clicking Start, All Programs, Accessories, and Command Prompt. At the prompt, type **ipconfig** and note the following information: local IP address, subnet mask, and

gateway. If you are using a wireless network, you'll also need your network's **SSID (Service Set Identifier;** your wireless network's name), wireless channel, and, if applicable, the WEP (Wired Equivalency Privacy) key.

Once you've found your router's local IP address, you should be able to assign the D-Link its own IP address. In our example, we started with our router's IP address (192.168.2.1) and tested 192.168.2.30 as a local IP address for the D-Link by typing **ping 192.168.2.30** at the command prompt. We received four "request timed out" messages, indicating no other device on our network was using that IP address. Remember that you must keep the first three sets of digits identical, and we recommend that your last number be between 1 and 100. We opened the Setup Wizard and clicked Wizard on the left sidebar. The camera's default IP address is 192.168.0.20, so the Wizard prompted us, noting that the default IP address did not correspond with our network settings, asking if we wanted to change the IP address. We clicked Yes to continue, left the Admin ID and Password fields empty, and clicked OK. We entered the camera's new IP address, subnet mask, and gateway in their respective fields. Again, certain cameras' software may automatically perform this step, and keep in mind that your network settings could differ from our example.

At the next screen, we clicked the Change checkbox above the New ID and New Password fields and entered a new admin ID and password for each. We clicked Next twice to reach the Wireless Interface dialog box. At the Wireless Interface screen, we clicked the Infrastructure checkbox and entered our SSID and wireless channel. If you're using WEP, click the Change Encryption WEP Key checkbox and enter your network's WEP key. Finally, we clicked Next, reviewed the settings, and rebooted the Netcam with its new settings. On the D-Link, an orange light just below the green power light will indicate that it is properly config-

## Static & Dynamic IP Addresses & Your Netcam

**W**hen you access the Internet, your computer uses a public IP (Internet Protocol) address, which identifies its location on the Web. Your ISP (Internet service provider) usually assigns you a public IP address automatically. This IP address can either be static or dynamic.

You probably have a dynamic IP address because ISPs have more subscribers than IP addresses and only assign an IP address to a subscriber when he needs one. It's very likely you'll receive a different IP address each time you log on. Your ISP can even assign you a different IP address while you're online. It's convenient for ISPs, but a dynamic IP address can be a major headache if you're trying to access your Netcam remotely.

Here's why: Your IP address could be 65.32.124.32 at one point but change to 65.32.124.35 without your knowledge. If, after the change, you type 65.32.124.32 into a remote Web browser, you won't be directed to your Netcam because you're directing the browser to an IP address

that is no longer assigned to your computer.

There are two solutions to this problem. First, you can try to obtain a static IP address. A static IP address won't change, so you'll be able to access your Netcam with the same IP address every time. The downside is that ISPs are reluctant to further limit their available IP addresses and may not provide static IP addresses. If they do, you may have to pay an extra fee.

If you can't obtain a static IP address, several companies offer a dynamic DNS (domain name server) service that acts as a pseudo-static IP address. This service allows you to pick an easy-to-remember host name such as yourname.dnsservice.org that will take you to your public IP address even if it changes. The D-Link DCS-900W functions with three such providers: DynDNS.org (<http://www.dyndns.org>), TZO (<http://www.tzo.com>), and DHS International (<http://www.dhs.org>).

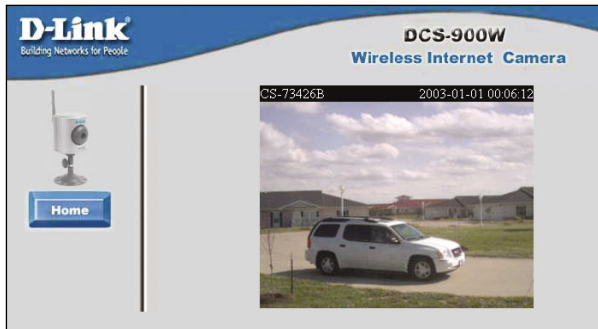
We set up a free account with DynDNS.org. After we activated our account, we clicked the

Services tab near the top of the page, Dynamic, and Add Host and typed our first host name. DynDNS.org automatically identified our current public IP address. We clicked the Enable Wildcard checkbox and the Add Host button.

We opened two available ports on our router (see main text) and returned to DynDNS.org. After logging on, we clicked the Services tab, WebHop, and Add Redirect. We typed another host name and selected another domain name from the dropdown menu. The domain name is the host name you'll use to access the camera. In the Redirect URL field, enter the first full domain name (for example, *your name.dyndns.org*) and at the end, add :80 or whatever port number you opened on the camera. We completed the process by clicking Add Redirection. Once you add these two host names, you'll be able to access the D-Link regardless of your public IP address by entering the second domain name in the browser's Address bar. ■

ured and communicating with your router.

Some Netcams include software to view a video feed, but the D-Link uses your default browser and one of two plug-ins—ActiveX or Java. (We installed ActiveX in our example.) These



**Although this still of an outdoor image looks pretty good, the D-Link is intended for indoor use; point it through a window if you want to capture activity outside.**

plug-ins add multimedia capabilities your browser will need to view live video from the camera. (A general rule of thumb is that Internet Explorer supports both ActiveX and Java, while browsers such as Netscape and Mozilla utilize only Java.) To install ActiveX, return to the original menu you used to install the Setup Wizard and click Install X-Plug, which installs the ActiveX plug-in. Click Next and follow the instructions to complete the ActiveX installation.

Once we installed ActiveX, we opened the Setup Wizard and clicked Link. The Setup Wizard automatically opened our default Web browser and prompted us for the new admin ID and password. We entered those and clicked OK. Once our browser displayed a still image from the D-Link, we clicked the ActiveX link to view the live video feed. (If you chose to install Java, click the Java link instead.)

### Go The Distance

It's understandable to think you can watch your Netcam anywhere in the world once you're able to watch it on your home computer. In reality, viewing a Netcam from outside your

home network requires additional steps. If your network is behind a router, you'll need to open two ports (here, a **port** is a channel through which data is sent) to view your camera's output from a remote location.

The D-Link uses port 80 as its default Web server port and port 8481 for image transmission. We used these two ports in our example; in theory, you should be able to open any two ports your ISP permits. Your router's users manual should explain how to open ports. If you choose to open different ports, you must access your camera locally by typing the D-Link's local IP address (the IP address you gave it during the initial setup) in your browser at home. Click Setup and scroll down. Click Yes next to Open Second Port. Enter the numbers of the Web Server and Transfer Image ports you opened in their respective fields and click Apply.

If you're using the D-Link behind a static IP address (see the "Static & Dynamic IP Addresses & Your Netcam" sidebar) you can remotely access the camera by typing *x.x.x.x:yy*, where *x.x.x.x* is your router's public IP address and *yy* is the port number you opened for the Web server.

Users who have set up a dynamic DNS (domain name server) service (again, see the sidebar) should scroll up on the Setup screen to Dynamic DNS. Click Yes, select your service provider from the drop-down menu, and enter your host name, username, and password. Click Apply.

Remember to follow the above instructions based on the ports you opened. You can remotely access your camera by typing the host name into your Web browser's Address bar.

### Record Automatically

You can configure the D-Link to continuously or periodically record video to your hard drive with IPView Lite, an application included on the installation CD. Other cameras should include a similar utility or incorporate it into the viewing software.

After we opened IPView Lite, we had more legwork to do so that we could record video from the D-Link. First, we added the camera by clicking Camera and Add from the IPView Lite menu. Depending on whether you're using IPView Lite locally or remotely, fill in the empty field as if you were accessing the camera based on the above examples and click Add. We clicked Camera from the pull-down menu and clicked Record or Stop to control recording.

(With most Netcams, it's also possible to have the camera record when it detects motion.)

### Aspirin Not Included

We had hoped that the Netcams we tested could display reasonably detailed video without too much delay, and, in general, they did just that. However, it takes patience to set one up, mainly because one false step along the way can keep your Netcam from working properly. But, if you can accept the possibility of a few headaches, a Netcam can offer you a remote window into your home. ■

BY VINCE COGLEY



**The D-Link includes a mounting bracket for installing it in your favorite nook or cranny.**

# Email Headers

## Analyze What Goes On Behind The Scenes

HAVE YOU EVER WONDERED how an email message finds its way from a sender to a recipient? It may surprise you to know that email doesn't go directly from a sender's computer to a recipient's computer. In fact, if you substitute the word "building" with the word "computer," email processing is quite similar to postal mail processing. Postal mail gets processed through a minimum of four buildings on its way from the sender to the recipient: the sender's home, the sender's local post office, the recipient's local post office, and the recipient's home. Each of these buildings has a unique identifier: a postal address.

Similarly, at least four computers are generally needed to process email. The first is the sender's computer, where the email originates. Email is initially received *from* the sender's computer *by* the email server of the sender's ISP (Internet service provider). Email is then received from the email server of the sender's ISP by the email server of the recipient's ISP. Finally, when the recipient decides to retrieve the messages addressed to his email account, the email is received by his computer from his ISP's email server. Each of these computers has a unique identifier: an IP (Internet Protocol) address.

An exception to the four-computer-minimum scenario we just described occurs when email transmits from one customer of an ISP to another customer of the same ISP. In this case, only three computers may be needed if the sender and recipient happen to share the same email server at the ISP. Likewise, local

postal mail may only need to go through one post office.

The phrasing in the previous paragraphs may seem a bit awkward because we needed to explain the process in terms of email being received *from* one computer *by* another computer. There is a method to our madness. Every email message contains information that identifies the route it took via the Internet from the sender's computer to the recipient's computer. This information, called **email headers**, uses the received-from-computer-A-by-computer-B syntax as opposed to the sent-by-computer-A-to-computer-B syntax. The sooner you get used to this somewhat awkward syntax, the easier it will be for you to analyze email headers.

### Email Headers 101

You are already familiar with some email headers—the From, Date, To, and Subject lines—but there is a lot of header information that most email apps hide. However, you can easily display this hidden information. For specific examples, visit SpamCop at [http://www.spamcop.com/help\\_with\\_headers](http://www.spamcop.com/help_with_headers), where you'll find excellent, visual instructions for displaying email headers in 16 email applications.

It's impossible to make you an expert on analyzing email headers by just

going through one detailed example because the programs email servers use vary greatly, and each of these programs generates email headers in a slightly different fashion and order, leading to an infinite number of permutations.

And if that isn't confusing enough, spammers use sophisticated techniques to generate forged email headers that hide their identities and locations. Linus Upson, co-founder of Qurb (<http://www.qurb.com>), an anti-

spam software company, says, "Analyzing email headers is a lot like reading tea leaves. In many cases, you have to use your experience, deductive skills, and judgment to distinguish between real and forged email headers because spammers resort to elaborate trickery."

These complexities notwithstanding, we can still give you a general idea of how to analyze email headers by reviewing an example. To keep things simple, we'll show you the headers from a legitimate email message. (Later in the article, we'll discuss some of the ways that spammers manipulate various headers to avoid detection.) We numbered key lines to facilitate subsequent analysis. Received headers are generated from the bottom up. That is, the top-most Received header (line 8 in the example) represents the last stop the email made, and the bottommost Received header (line 6) represents the first stop the email made after leaving the sender's computer. Other headers can appear in various places, depending on which apps email servers are using.

9. Return-Path: <alanluber99@hotmail.com>
8. Received: from hotmail.com ([207.68.163.96]) by imf04aec.mail.bellsouth.net (InterMail vM.5.01.06.08 201-253-122-130-108-20031117) with ESMTTP





id <20040602082923.IRTJ11164.imf04aec.mail.bellsouth.net@hotmail.com>

for <gws@bellsouth.net>; Wed, 2 Jun 2004 04:29:23 -0400

7. Received: from mail pickup service by hotmail.com with Microsoft SMTPSVC; Wed, 2 Jun 2004 01:29:22 -0700
6. Received: from xx.xxx.xxx.xx by sea1fd.sea1.hotmail.msn.com with HTTP; Wed, 02 Jun 2004 08:29:21 GMT
5. X-Originating-IP: [xx.xxx.xxx.xx]  
X-Originating-Email: [alanluber99@hotmail.com]  
X-Sender: alanluber99@hotmail.com
4. From: "Al Luber" <alanluber99@hotmail.com>  
To: gws@bellsouth.net  
Subject: Picture of kids  
Date: Wed, 02 Jun 2004 08:29:21 +0000
3. Mime-Version: 1.0
2. Content-Type: multipart/mixed; boundary="-----\_NextPart\_000\_11c1\_47c8\_277"
1. Message-ID: <Sea1-F96ErMt1dvKqW700033a2c@hotmail.com>

To better explain what these headers mean, we'll analyze these header lines in the order they were generated.

**1 Message-ID header.** This is a unique ID generated by each email server that processes the message. From this header, we can determine that the message is being sent via Hotmail.

**2 Content-Type header.** "Content-Type: multipart/mixed" indicates that there are independent parts of an email message that need to be bundled in a particular order. In this example, the email has a graphics file attachment. The boundary line is just a string of text to indicate the boundary between the two parts of the message. You will see the words "multipart/alternative" in the header if the same information in the email is presented in different forms, such as in HTML (Hypertext Markup Language) for newer email programs and in plain text for older email programs.

**3 Mime-Version: 1.0 header.** This header simply refers to the use of MIME (Multipurpose Internet Mail Extensions), an email format that lets users attach multimedia files.

**4 From, To, Subject, and Date headers.** These headers identify the name of the person sending the message, her email address, the intended recipient, the subject, and the date and time (in 24-hour military time) the message was sent. Listing "+0000" in the date line indicates the number of hours the message's time stamp is ahead or behind Greenwich Mean Time. For example, "-0500" is Eastern Standard Time. Line 4 indicates this particular message was sent from the Greenwich Mean time zone.

**5 X-headers.** X-headers are descriptive headers certain email apps insert. Because these headers aren't universally used, some people call them experimental headers or header extensions. In our example, it's fairly obvious that Hotmail inserted the X-headers.

**6-7 Received headers.** The first two Received headers in this message pertain to the internal handling of the message within Hotmail (which happen to be via two email servers in different time zones).

**8 Received header.** This header describes the receipt of the message from Hotmail by the recipient's email server: imf04aec.mail.bellsouth.net. The "bellsouth.net" portion indicates that the recipient's ISP is BellSouth. "InterMail" refers to the software BellSouth is running on its email server. The long string of numbers following "InterMail" refers to its version number. "ESMTP" refers to Extended Simple Mail Transfer Protocol, which permits the transfer of graphics, audio, and video files.

**9 Return-Path header.** The Return-Path header displays the email address to which a reply will be delivered, which is normally the same email

address as the sender. The Return-Path header also indicates the email address to which delivery problems will be reported. This address may be different than the address in the From header.

## Games That Spammers Play

Now that you know what a legitimate set of email headers looks like, let's discuss the games that spammers play.

**Open relay olé.** For spammers, the name of the game is hide; hide from recipients and hide from authorities. In a Lawrence Sanders novel, the killer mails a package to a post office in another city. Inside the package are stamped letters addressed to other people. When the postal employee opens the package, he naturally puts the other letters in the mail. By using this intermediate post office as a relay, the killer succeeded in hiding his real location.

Spammers employ a similar technique to hide their locations by using **open-relay mail servers** to launch massive spam mailings. These servers are usually misconfigured email servers that let *anyone* send email through them. An owner of an open-relay mail server is as much a victim of a spammer as spam recipients. Spammers can find these servers using automated tools available online, such as Smtplib Server Hunter (<http://www.relayprobe.com>). If you want to test an email server to see if it has this vulnerability, visit Network Abuse Clearinghouse's Mail Relay Testing page (<http://www.abuse.net/relay.html>).

It's worth noting that many viruses and worms are used to turn unsuspecting computers with broadband connections into spam relays. According to a new study by Sandvine (<http://www.sandvine.com>), a network management firm, about 80% of spam now comes from compromised computers, which are referred to as spam zombies.

**The name game.** You will almost never see the spammer's actual email address in the Return-Path header of a spam message. The address will either be fictitious, or the spammer will use a

real email address that is not his own. A massive spam mailing using an innocent victim's email address is known as a **Joe Job**. Any undeliverable spam bounces back to the victim, even though she didn't send the spam.

If you are suddenly flooded with email from MAILER-DAEMON, Mail Administrator, or Postmaster with a Subject line of "Mail System Error – Returned Mail" or "Delivery Status Notification (Failure)," you have been the victim of a Joe Job. The people who receive spam may send angry responses to you, even though you had absolutely

nothing to do with the spam. The more visible your email address is to the world, the more likely you are to be the victim of a Joe Job. If you are such a victim, chances are good that one of the undeliverable messages that bounces back to you will include the original email message, complete with headers. You can try to analyze the headers to determine where to report the abuse, but we suggest that you go to SpamCop's home page (<http://www.spamcop.com>), copy and paste the headers into the interrogation window, and click the INTERROGATE! button. The

underlying app, Spam Inspector, will automatically analyze the headers and display an email address that you should use to report the spammer.

**Wheel of forgery.** Spammers are skilled at using SMTP commands to forge Received headers in order to make it appear as if a specific computer and/or location launched the spam. Such forged Received headers always appear at the bottom of the set of email headers. Once the message transmits to a real email server, it is out of the spammer's control. All Received headers from that point on are legitimate.

The From, To, Subject, and Date headers also are easy for spammers to forge. Spammers may even set the time stamp incorrectly to make you think they are in a different time zone. The From header is almost always phony, and the Subject line may have intentional misspellings to fool antispam software. For example, a spammer may spell the drug Vicodin as "V~i\_c\_o'din" in a Subject header.

## Take Action

There are some things you can do to report spammers (see the "Don't Be Fooled" sidebar), but views are mixed as to whether reporting spammers accomplishes anything. David Jameson, founder of DigiPortal Software (<http://www.digiportal.com>), maker of anti-spam software ChoiceMail One, says, "I really don't see the point. The spammers switch domains and email addresses all the time, so for the most part, reporting them doesn't really do much. . . . Better to just block them and forget about it."

If you are intent on reporting all spammers, GIANT Company Software's Spam Inspector 4.0 (\$29.95; <http://www.giantcompany.com>) can do this for you. This program analyzes email headers and notifies up to 10 different email and ISP administrators whose email servers and networks are being abused by the spammer. ■

BY ALAN LUBER

## Don't Be Fooled

**P**hishing, one of the most dangerous spamming practices, is the act of sending an email in which the spammer pretends to be a well-known legitimate company, such as eBay or PayPal. The idea here is to fool the recipient into revealing confidential information, such as a username, password, and credit card number. This type of fraudulent email often contains a link to a very realistic-looking but fake Web site. The email message is the bait, and the phisher only needs to hook a small percentage of recipients to make off with a small fortune. Phishing is also referred to as **spoofing** because

the phisher is pretending to be somebody else.

We're not about to suggest that you attempt to track down the originator of every spam

message you receive—the benefits simply aren't worth the effort. But identity theft spam scams are another matter. Helping the authorities track down these criminals might save you, a family member, or a friend from being scammed out of his life savings.

For example, thousands of people recently received the following email purporting to be from PayPal:

```
-----Original Message-----
From: service@paypal.com [mailto:service@paypal.com]
Sent: Tuesday, June 05, 2004 9:35 PM
To: Luber, Eleanor
Subject: New email address added to your PayPal account

You have added dvd@free@aol.com as a new email address for your
PayPal account.

If you did not authorize this change or if you need assistance with
your account, please contact PayPal customer service at:

https://www.paypal.com/cgi/scr?\*\_sp\_email

Thank you for using PayPal!
The PayPal Team

Please do not reply to this e-mail. Mail sent to this address cannot be
answered. For assistance, log in to your PayPal account and choose the
"Help" link in the header of any page.
```

The link embedded in this message takes the recipient to a phony but very realistic-looking PayPal Web page that requests a username and

a password. If you are fooled into providing it, the thief will have access to the funds in your PayPal account. The email headers from this message indicate that it was routed through an adult Web site's open-relay mail server.

When you receive one of these messages, you should report the abuse to the company being spoofed. In this example, PayPal has a vested interest in capturing these criminals because such conduct affects its good name. A victim is likely to blame PayPal even though PayPal is not at fault, and this can result in negative publicity for the

company. Be sure to cut and paste the full email headers into your message to assist the company in tracking down the scam artist(s). ■

### A Sea Of Bluetooth

**Problem:** I've heard of Bluetooth-enabled phones, but where can I find other Bluetooth devices?

**Solution:** It wasn't long ago that Bluetooth (a low-cost, short-range wireless specification for connecting mobile devices) was touted as the next big thing, even though there weren't many enabled products available. Well, Bluetooth may not be at the next-big-thing level yet, but you might be amazed at what Bluetooth can do for you. Check out the 500-plus products that use this technology at the official Bluetooth Web site (<http://www.bluetooth.com/products>). From cars to keyboards—and yes, that includes phones—there's bound to be a new way you can get the most out of this wireless wonder.

### How Much Cash For Your Collectible?

**Problem:** Is there a Web site where I can get an appraisal for an antique?

**Solution:** Yes, there are free appraisal sites on the Web, but as conventional wisdom dictates, you get what you pay for. Some antique dealers feel that free appraisals are either scams of some sort or ballpark estimates that aren't backed up with the proper research. Antique & Collectible Appraisals Online (<http://www3.sympatico.ca/appraisers>) offer relatively low-cost appraisals for either \$9.95

or \$18.95, depending on the amount of detail and supporting documentation you want.

### Make Sure Your Doctor Makes The Grade

**Problem:** I'm not happy with my current physician, but where can I find background information on other doctors?

**Solution:** The Web has made the process of researching physicians much easier. There are a number of health care referral sites out there, but here's a site that can deliver the goods: HealthGrades (<http://www.healthgrades.com>). HealthGrades offers detailed reports about physicians, with each report including such information as education, certification, specialties, and government disciplinary action—all for \$7.95 for the first physician report you place in your shopping cart and \$2.95 for each subsequent physician report you select. Reports

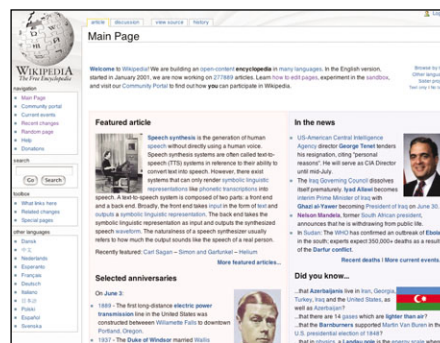
about hospitals and nursing homes are also available at HealthGrades.

### Fake Or Real Smiles?

**Problem:** Each time I provide feedback, my boss seems to agree with me because she is smiling as I talk with her. How can I tell if her smile is fake?

**Solution:** Seriously, how good are you at reading people? The BBC has built a wonderful, award-winning, interactive site titled Science & Nature: Human Body & Mind (<http://www.bbc.co.uk/science/humanbody>), which features several psychological tests, including

"What Disgusts You?," "Can You Read Faces?," and of course, "Spot The Fake Smile." Just click the links in the lower-right area under "The Mind." This site most likely won't help you become friends with your boss, but it will give you quite an entertaining insight into how people behave.

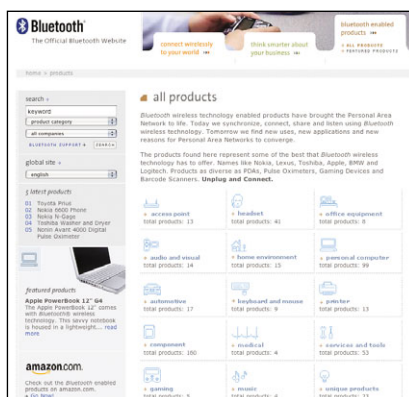


Wikipedia is an online encyclopedia that lets any and all users write new articles and edit existing pieces on the fly. With thousands of contributors per day, this site is a great resource for current news.

### Open-Source Encyclopedia

**Problem:** I'm frustrated by the bias I perceive in the major media. Where can I find objective articles on current events?

**Solution:** "Objective reporting" has become a loaded phrase for some people. Usually one expects to go to the Web for extremely biased, opinionated writing, but at Wikipedia, The Free Encyclopedia (<http://www.wikipedia.org>), you'll find something quite special. The Wiki concept is geared toward creating HTML (Hypertext Markup Language) documents that everyone can collaborate on. This encyclopedia, consisting of articles that thousands of people write and edit, strives to present information from a "neutral point of view." Although this site probably won't replace your daily newspaper or televised evening news as a top source for news, Wikipedia is an amazing glimpse of where the World Wide Web could go in the future.



Bluetooth-enabled devices are becoming more common, and the product page of the official Bluetooth site is a good place to find information about them.





# Charter An Online Fishing Trip

## AntiqueLures

<http://www.antiquelures.com>

We're not sure whether to blame the fishermen or the fish for the swarm of sparkly, neon lures that clog sporting goods store shelves. If you reminisce about the good 'ol days of hand-crafted fishing lures, look no further than AntiqueLures. The Web site's author, Michael Echols, collects antique lures and displays his impressive collection of wood, metal, and plastic tackle. According to Echols, his Web site was the first antique lures site to splash its way onto the Web. You'll find hundreds of pre-1960s lures on the site, including our favorites, the South Bend Surf-Oreno. You can also find several articles about identifying and trading antique lures.

## FishingWorks.com

<http://www.fishingworks.com>

If you don't want to come home empty-handed, pull your chair up to the FishingWorks.com Web site before you go fishing. The Web site's main page links to a variety of useful tools, including a world map that lets you search for fishing guides by country. If you're searching for American guides, you can select the appropriate state to view a list of available guides and links to their Web sites. The site also links to fishing Web cams across the country, which means landlocked anglers can view their favorite shores from their desks.

## FishingWorld.com

<http://www.fishingworld.com>

If a rainy day ruins your fishing plans, read a few of FishingWorld.com's articles or browse the Headline

News section. Although most of the articles discuss fishing tournaments and expeditions, you'll also find other interesting fish-related stories, such as a recent article that explores the dangers (to reef inhabitants) of tossing unwanted aquarium fish into the ocean. If you fish at lakes, take a look at the Lake Maps section, which links to detailed maps of popular lakes. Each map includes Profile and Fishery Info sections and short descriptions of popular fishing areas. If you're planning a fishing trip, browse the Market Place section, which has Lodging and Tournament sections.

## FlyFish.com

<http://www.flyfish.com>

If you love fly-fishing, take a look at FlyFish.com's large selection of fishing reports. Local bait and tackle shops regularly contribute fishing reports that indicate the week's best fishing areas. Each report also includes the shop's contact information and location. You can find other fly-fishing news in the site's Newsroom section and enthusiasts' stories in the Library. FlyFish doesn't sell fly-fishing merchandise, but its MarketPlace section links to several online retailers. You can find hundreds of fly images (some of which include tying instructions) in the FlyBin.

## MarineNews

<http://www.marineNews.com>

Unless you're planning a trip to Australia, you probably won't be interested in MarineNews' Fishabout Tours and Weather sections, but any fishing enthusiast who hasn't yet mastered the tricky art of knot tying will love the site's Rope Knots and Fishing Knots

sections. Each knot type includes static and animated images, as well as a short paragraph that describes the knot's purpose and provides basic instruction. MarineNews also has a large selection of articles. You can browse the articles by fish or browse the General Fishing section. If you don't throw back your daily catch, take a look at the cooking section, which lists several recipes.

## Squirrel Fishing

[http://www.eecs.harvard.edu/~yaz/en/squirrel\\_fishing.html](http://www.eecs.harvard.edu/~yaz/en/squirrel_fishing.html)

We bet you haven't heard of the latest soon-to-be-big fishing trend: squirrel fishing. If the fish aren't biting, hang up your pole, grab some string, and head out to your backyard. Nikolas Gloy and Yasuhiro Endo, two (apparently bored) Harvard students, took the sport of fishing in a new direction. The students "hook" squirrels by tying a peanut to a string and then tossing it in the direction of a nearby squirrel. Once the squirrel bites, the squirrelmen reel in the stubborn beast.

## The Fishing Notebook

<http://www.fishingnotebook.com>

The Fishing Notebook has an excellent gallery that features user-submitted photographs of caught fish. If you've never seen a Giant Siamese Carp, click Photo Gallery and browse the 2004 section. The site has plenty of fish recipes and even includes instructions for filleting your catch. The Fishing Notebook also has a Fishing Stories section. You can submit your own story or read some of the area's selection of stories. Thanks to Fishing Stories' rating system, you can easily track down the best tales.

# That's NEWS To You

Finding the appropriate Usenet discussion group to match your interests can be a monumental task. So each month, we scour tens of thousands of newsgroups and highlight ones that delve into popular topics. If your ISP (Internet service provider) doesn't carry these groups, ask it to add the groups to its list. This month we cast our lines into two fishing groups to see who takes the bait.

## rec.outdoors.fishing

The rec.outdoors.fishing group fields general fishing questions, including such topics as where to find certain types of fishing reels and how to attract minnows. The group has plenty of active and friendly users who don't mind answering basic questions. If you're new to fishing or have general questions, feel free to post a message here.

.....

## rec.outdoors.fishing.saltwater

Users here regularly swap stories about the ones that got away and the few that didn't. If you have general fishing questions, you'll probably want to post a message to the rec.outdoors.fishing group. Users also discuss (and hawk) charter services and equipment and post pictures of the day's catch.

## Share The Wares

Some of the best apples in the online orchard are the free (or free to try) programs available for download. Each month we feature highlights from our pickings. This month we land some of the biggest fish in the software pond.

### Pro Bass Fishing

<http://www.atari.com>

Have you ever wondered what a lure looks like to a fish as you reeled the little plug through the water? Now is your chance to find out. Once you cast your fishing line, Atari's Pro Bass Fishing takes you underwater and lets you watch the lure. If you see fish nearby, you can jiggle the lure until one of them makes the mistake so many fish wish they never made. Once you hook your trophy bass, you'll need to reel it in without breaking your rod or letting the fish have enough slack to wiggle free. Unlike many fishing games, which rely solely on the keyboard, Pro Bass Fishing lets you cast your line, hook the fish, and reel it in with the mouse. You can also use the mouse (or keyboard) to adjust important options, such as Lure Type, Line Weight, Reel Speed, and Drag Setting. Once you catch a fish, you can either release it or put it in your boat's live-well.

If you have trouble catching fish in one location, you can move your boat to a different spot. You can use the Fish Finder to determine the water depth and to spot nearby fish. If you're an expert angler, take your fishing skills to a bigger pond: the Internet. If you have an Internet connection, you can play Pro Bass Fishing online. Atari doesn't offer a free version of Pro Bass Fishing or sell it from its Web site, but you can try it and then buy it for \$19.95 at Trygames (<http://www.trygames.com>). The demo is a full version of Pro Bass Fishing, which means you can try out all the game's features, but the demo only lets you play for 60 minutes.

### FishInSight

<http://www.fishinsight.com>

Although you've probably had at least one fishing experience you'd like to forget, you've also probably noted successful fishing trips so you can return to the same area later. If you regularly jot down notes about your fishing trips, you'll love FishInSight, which acts as a digital fish log. Each entry lets you note moon and tide information, the number and type of fish caught, and the date. The software also lets you import maps and supports GPS (global positioning system) devices, which means that you can mark GPS waypoints on your fishing maps. If you have a GPS device, you can accurately mark any location (even if you

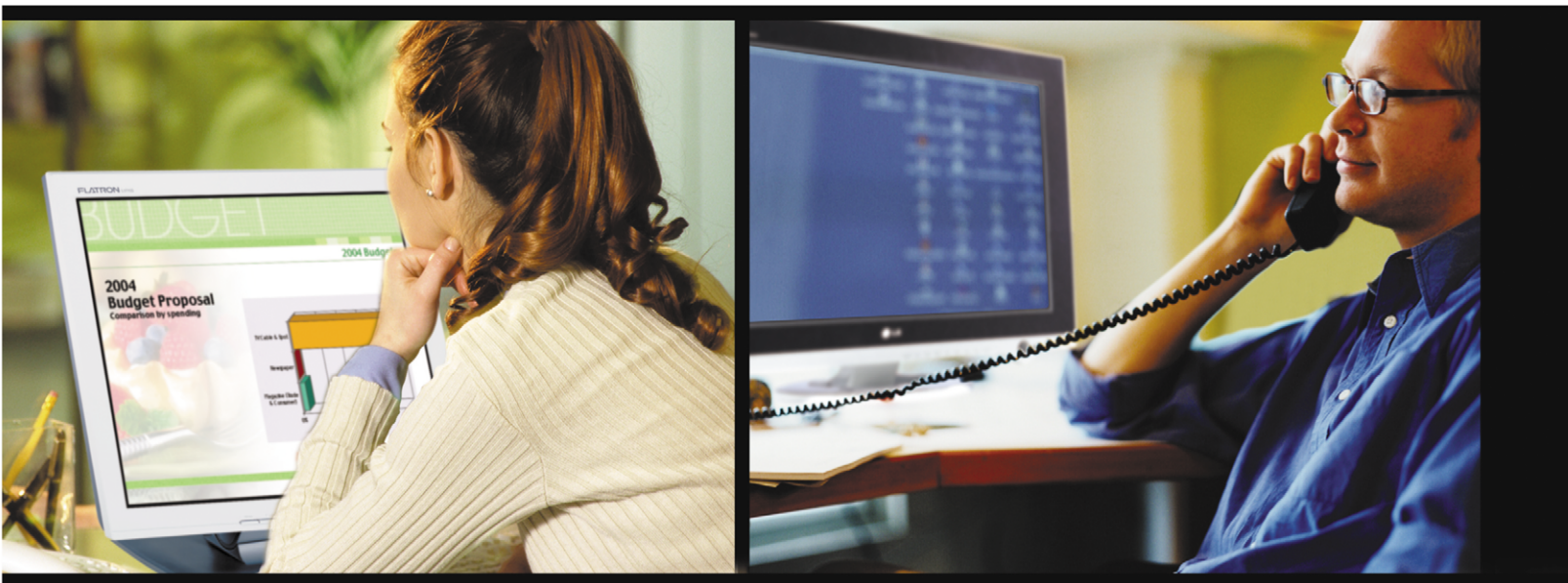
are in a boat) and then return to the same spot later. FishInSight also includes a Contacts section, which lets you store fellow anglers' information. Try FishInSight for 60 days or buy it for \$49.95.



**Catch a whopper with Atari's Pro Bass Fishing.**



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# Stop The

**W**ine, cheese, and investments get better with age; computers do not. The rigors of daily usage can inflict a heavy toll on a PC. You may not see the effects at first, but you will eventually notice the telltale signs of an aging system. It will boot more slowly, hum more loudly, and crash more often. You may find yourself rebooting the machine several times a day. Or maybe you won't reboot it at all in order to avoid the litany of error messages that litter the screen each time you try to shut the system down.

There's little you can do to keep a PC in pristine condition, especially if you want to use it for more than playing an occasional game of solitaire or calculating algebraic equations. Like other electronic devices, a computer begins to wear down after hours and hours of intense usage. Use it long enough, and you'll end up with a caseload of failed components. Fortunately, you can delay that fateful day.

## Why The Wear?

Awareness is the first step. You must understand the common causes of premature PC aging before you can successfully use techniques and tools to help you extend your PC's life.

### **Software installation and removal.**

One of the first things a computer user does after setting up a new system is uninstall the superfluous software that came bundled with it. One of the next things a computer user does is install a plethora of productivity suites, entertainment applications, and other programs. This install-uninstall



# Decline

## Fight The Forces Of PC Aging

cycle, which continues throughout the life of the computer, results in an assortment of stranded Registry settings and orphaned bits of code that clog up a system like hair in a drain, causing the PC to run much more slowly than it should.

**File creation and deletion.** Think of your PC's storage drive as a movie theater. Every file you create is like a person who fills a seat upon entering the theater. At first the theater has plenty of room to accommodate groups of any size. But as more people enter, seat selection becomes limited. By the time the show starts, theatergoers have to climb over one another to reach the few available seats that remain.

So it is with your computer. As data accumulates, storage efficiency decreases. It doesn't matter whether you're dealing with text documents, digital snapshots, email messages, financial spreadsheets, or program files—every bit adds to the total. As the drive fills, the system has to spend more time looking for available space. And that means you spend more time waiting for files and programs to open.

**Online activity.** Going online has become a risky proposition. Some Web sites and software downloads surreptitiously deposit adware, spyware, and cookies on your hard drive.

Various email messages sneak viruses, worms, and Trojan horses into your system. And all you can do is sit back and watch as crashes increase, reboots hang, and downloads slow to a trickle.

**Environmental conditions.** Run your finger across the top of your monitor. Now look at it. Unless you're an extraordinarily persnickety neatnik, your finger is probably covered with a quarter-inch coat of gray fuzz. Gross, huh? Well, it's not nearly as gross as the fact that your PC's internal components are coated with the very same stuff. A computer collects dust, hair, animal dander, carpet fibers, smoke particles, and anything else floating in the air. The buildup of such pollution inside your system can cause overheating, drive errors, head crashes, short-circuiting, and outright equipment failure.

### A Fountain Of Youth

There is hope. You can prolong the functional life of your system by exercising some common sense, installing only the software you need, and cleaning your computer and office regularly. You also should consider taking advantage of freeware and shareware utilities designed to help you shape up the hard drive (see "Get Rid Of The Gunk" on page 62),

cleanse the Registry (see "Wring Out The Registry" on page 65), and get your system in tip-top condition (see "Maintenance & Customization" on page 72).

These third-party, single-purpose programs provide a satisfying—and often inexpensive—alternative to the brand-name system maintenance suites found on the shelves of computer stores. After identifying several utilities you like, you can begin the process of restoring your PC to its youthful condition. Your computer won't improve with age, but you can help it avoid the wrinkles and gray hairs of underperformance that often accompany it. ■

BY JEFF DODD

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# Virus Vice Squad

## Antivirus Software Stops Malicious Code In Its Tracks

Using a computer without antivirus protection is like driving without a seatbelt: You might survive the ride, but you're taking a massive risk. Viruses, worms, Trojan horses, and other types of malicious code surround our computers everywhere today, particularly online, where the threat of viral infection is higher than ever. Even if you're careful not to visit shady Web sites or open suspicious attachments, you still risk infection from a horde of other sources that aren't always obvious.

The use of antivirus software is necessary to combat this constant, pervasive risk at all times. These programs use time-tested techniques to stop viruses before they can cause damage to your computer, and without this software, we'd be completely at the mercy of virus writers who continue to churn out heaps of new threats every year.

### Battle Back

To adequately fight an enemy with numbers that grow by the day, antivirus apps employ sophisticated weapons to catch both known and unknown viruses. Each program draws upon a database of virus signatures (or definitions) that includes data on each of today's known viruses in the wild—that is, known to exist outside of test labs. Armed with this regularly updated database, these apps can watch for any virus to appear on a computer, regardless of whether the virus is sent as an email attachment, uploaded through a floppy diskette, downloaded from a site, or acquired via another method.

Antivirus apps use two forms of scanning to stop viruses before they

can cause damage. With on-access scanning, an antivirus program stays open but out of the way, quietly scanning any file or executable that you open or download. For example, if you open a Microsoft Word document, you typically won't even realize that your antivirus program is scanning it before the document appears on-screen. This unobtrusive scanning method helps your system stay protected between manual scanning intervals and remains transparent until the program actually detects a virus, at which point it'll warn



Grisoft's AVG Free Edition features a smart, simple interface that makes antivirus control a snap.

you that it found a virus. The second scanning method is on-demand scanning, which scans files or hard drives immediately when you instruct it to do so. With regular manual virus scans, the program can catch viruses that slipped by its on-access scanning.

In addition to comparing files against signature databases, most antivirus programs also can use a more complex type of virus hunting called **heuristics**. Unlike typical scanning that looks for specific signatures, heuristic scanning looks for virus-like characteristics or activities performed by files or programs. Heuristics compare normal

code processes with actual code processes it finds in files and programs, and if an antivirus app discovers behavior that reflects virus activity, such as an unauthorized program trying to connect to the Internet, it will quarantine the suspect file or

program until it can verify the presence (or absence) of a virus. Although heuristic methods can snare new viruses that aren't yet defined in the signature databases of antivirus apps, they can occasionally nab innocent files that are supposed to be doing what they are indeed doing. Nonetheless, because new viruses appear every day, heuristics are usually an effective tactic for overall virus protection on most systems.

Regardless of the antivirus app you choose, it's crucial to keep it running at all times and regularly update it. Most apps will let you select intervals for automatic online updates, and it's a good idea to enable this option and set it to retrieve new virus definitions at least every few days (many antivirus companies update their virus definitions daily). The more often you update your signature database, the less often you'll need to run a manual virus scan, but it's still smart to run a full scan at least weekly, especially if you spend plenty of time online.

### Arm Yourself

You may not recognize some of the following antivirus apps, but all of them feature similar utilities designed to deliver comprehensive antivirus protection. Because most antivirus apps offer fairly effective virus protection, choosing one tends to depend on what you prefer in terms of price and features. (For information about more popular antivirus software, see our "The Big Boys" sidebar.)

**Virus Control.** Using the company's SandBox technology, Norman's Virus Control (\$60 after 30-day trial; <http://www.norman.com>) can detect

both existing and unknown viruses, Trojan horses, and worms. With SandBox, an emulator tests possible infected executables in a virtual environment to see how they'd run in a real-world environment, which can help isolate new worms traveling via email and networks and within peer-to-peer environments. Virus Control features full email and newsgroup post scanning, as well as scanning all traffic using POP3 (Post Office Protocol 3), SMTP (Simple Mail Transfer Protocol), and NNTP (Network News Transfer Protocol). A task editor lets you configure scheduled scans or scans you need to run in specific circumstances, such as when downloading files to a particular folder.

**AVG Free Edition.** The popular AVG Free Edition from Grisoft (<http://www.grisoft.com>) delivers antivirus protection that's easy to use and configure. It has a simple interface with one-click options for scanning all the hard drives on your PC or all removable media (including diskettes, CDs, and external hard drives). You also can check the status of the control center, resident shield, email scanner, and virus database with one click for each. Automatic online updates are quick and frequent and don't require a system reboot, but if you want more advanced scheduling features, purchase the full version.

**eTrust EZ Armor.** Computer Associates' eTrust EZ Armor (free for one year; <http://www.my-etrust.com/microsoft>) is an antivirus and firewall software suite that guards against both viruses and network intrusions. The suite includes free virus definition updates almost daily and free product upgrades for the first year, after which

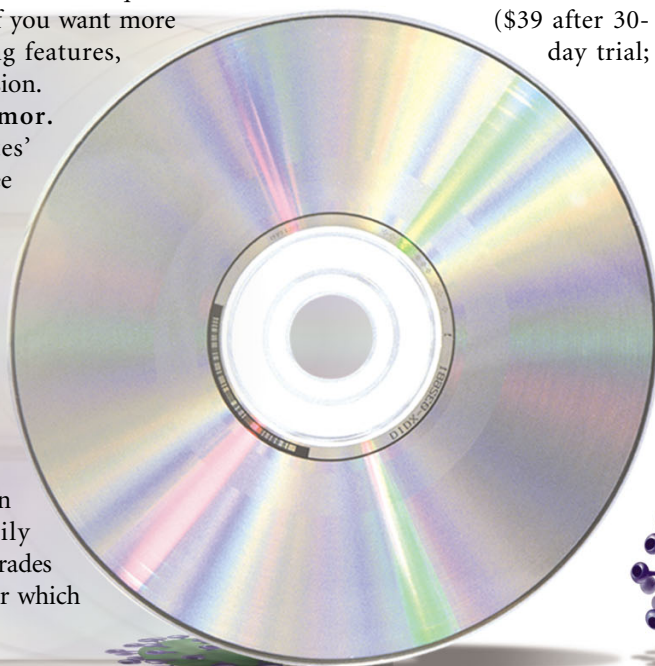
customers must renew the software at the renewal rate (current rates are \$29.95 for EZ Antivirus and \$39.95 for EZ Firewall). EZ Armor's virus scans are fast and easy to execute, and it uses low system resources in both active and background modes.

**AntiVir Personal Edition.** Developed by Germany's H+BEDV Datentechnik, AntiVir Personal Edition (free; <http://www.free-av.com>) can detect and remove more than 80,000 threats, including viruses, Trojan horses, worms, and other malicious code, including cost-heavy dial-up programs that, unbeknownst to you, make long-distance or fee-based telephone calls using your modem. Users can configure AntiVir Personal Edition so it retrieves updates every day or even every few hours, and an update wizard makes scheduling easy. AntiVir has a user-friendly interface with easy-to-use options; simply click to select the drives or folders you want to scan and click the Scan button. Although the app uses a fair amount of system memory in background mode, it remains unobtrusive until it catches a virus.

**NOD32.** If you like your antivirus software fast, efficient, and quiet, check out Eset's NOD32 (\$39 after 30-day trial;

<http://www.nod32.com>). This powerful software includes full protection for all types of files, including archive files, encrypted databases, and compressed or protected executables. Plus, a built-in emulator helps detect polymorphic and metamorphic viruses. Separate Internet and email monitors protect users from online threats by scanning POP3 and MAPI (Messaging Application Programming Interface) traffic. Automatic updates are simple and flexible, and small incremental updates reduce the amount of download and installation time required for new virus definitions. If you need to update a PC not connected to the Internet, NOD32 can even create updates on a diskette or CD. Using the Centralized Log file system, you can retrieve information the on-demand scanner generated, get details about such events as updates and tasks, and access data about infiltrations that resident modules and filters detected.

**avast! Home Edition.** ALWIL Software's avast! Home Edition (free; <http://www.avast.com>) features a clean interface that lets you enable on-demand scanning or change options, including on-access scanning settings. In addition, avast! Home Edition includes thorough email scanning and a specific plug-in for Microsoft Outlook. Windows shell integration lets you scan files or folders directly from Windows Explorer, and a special setting scans for viruses whenever a screen saver is active. The app also supports boot-time scans in Windows 2000 and Windows XP. This app even fully supports skins that change the software's appearance and includes three skins with the downloaded version. Many more skins are available to download from ALWIL Software's Web site.



## Make The Right Choice

Picking an antivirus program doesn't have to be an all-or-nothing affair. Almost all antivirus utilities let you download a free version (and some are free altogether), so if you download a program and don't like it, uninstall it and try another. Speaking of installation, always make

sure you're only running one antivirus application at a time, even if you're just testing. Running more than one of these programs simultaneously can cause serious system instability problems. Because some programs run in system memory even after you close all of the program's windows and no indication of the program appears in the System Tray, your best bet is to

completely uninstall each program before you install another one. Take your time while testing each program to make sure it handles everything you require and that it does so without interfering too much with your regular computer tasks. ■

BY CHRISTIAN PERRY

## The Big Boys

**D**eciding on an antivirus program that suits your needs can be confusing, especially when there are so many products available. Although many smaller-name products offer the same level of protection as more established, big-name products, you might be more comfortable using antivirus protection from a well-known company.

**Norton AntiVirus 2004.** Long one of the leaders in the antivirus market, Norton AntiVirus from Symantec (\$49.95 after 15-day trial; <http://www.symantec.com>) remains an effective program for keeping computers virus-free. In addition to guarding against viruses, Trojan horses, and worms, Norton AntiVirus also hunts down malicious code in Java applets and ActiveX controls. Although you can configure the program for automatic updates, Norton AntiVirus will deliver a pop-up message to inform you if its virus definitions are too old. The software also automatically scans downloaded files and executables before they're saved or launched, scans compressed files, and includes a bootable CD that provides recovery in

case of a virus emergency. Another useful feature of Norton AntiVirus is its ability to scan downloads in instant messaging applications, an area that other programs often overlook. Despite its high level of protection, Norton AntiVirus is notorious for being more intrusive than other antivirus software, so you might want to look elsewhere if you prefer more quiet protection.

**PC-cillin Internet Security.** Combining both antivirus and firewall tools, Trend Micro's PC-cillin Internet Security (\$49.95 after 30-day trial; <http://www.trendmicro.com>) aims to provide all-encompassing Internet protection. PC-cillin uses the company's Damage Cleanup Services, which trigger immediately upon detection of a virus. When the program detects a worm or other network-based malicious code, it can disable the PC's network access, preventing the worm from spreading. Real-time virus scanning inspects all inbound and outbound email, file downloads, and files received from instant messenger clients. Integrated PDA virus protection provides


antivirus security for Palm OS devices, Pocket PCs, and Symbian EPOC devices.

**McAfee VirusScan.** Like other big-league antivirus software, McAfee VirusScan (\$49.99 for download version after 15-day trial; <http://www.mcafee.com>) includes plenty of tools designed to deliver comprehensive system protection. The software's new Worm-Stopper defends against mass-mailing worms (such as Sobig) by watching for activity that's typical of a mass-mailer (dozens of emails sent to recipients within seconds, for example), and ScriptStopper stops script-based viruses (such as LoveLetter [aka I Love You]) by using similar tactics. VirusScan scans all inbound and outbound email, along with any attachments, sent or received by most popular email clients, including Microsoft Outlook and Outlook Express, Eudora, Pegasus, and Netscape Mail. Like Norton AntiVirus, VirusScan also scans instant messaging attachments sent with AOL Instant Messenger, Windows Messenger, and Yahoo! Messenger. The program also now detects other


malicious code, including adware, spyware, Web dialers, and others.

**Titanium Antivirus 2004.** With its SmartClean2 technology, Panda Software's Titanium Antivirus 2004 (\$39.95 per year after 30-day trial; <http://www.panda-software.com>) claims to automatically repair any damage viruses cause to your OS (operating system). Along with protection from viruses and similar threats, Titanium Antivirus also protects against Web dialers, hacking tools, and other malicious code. Automatic updates are fast and seamless, and new definitions are available at least once per day. Newer, crafty viruses can try to disable antivirus programs, but this software includes new immunization technology that helps battle these foes and even perform self-diagnosis to check that the program is running properly at all times. System scanning is relatively quick and doesn't eat substantial system resources, and configuring and performing scans is a breeze with the program's easy-to-handle interface. ■





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# Get Rid Of The Gunk

## Clean Your Hard Drive For Better Performance

**Y**ou would be hard-pressed these days to find a hard drive with a capacity of less than 20GB. And yet even a modest drive such as this can hold a whopping 160 billion bits of magnetically charged code. If each of these bits were as thick as a penny and you stacked them one on top of the other, the resulting column would stretch more than 154,000 miles into outer space.

Given the vast amounts of data involved, it's no surprise that users occasionally find their PCs suffering from drive errors and storage inefficiencies. The cumulative effect of such problems accounts for much of a PC's declining performance over time. The best way to combat these drive-related troubles is by periodically cleaning and repairing your high-capacity storage devices.

### Cleanliness Counts

A typical installation of Windows XP deposits 1.5GB of data on the hard drive. A productivity suite, such as Microsoft Office or Corel WordPerfect Office, may add as much as 500MB. You can fill another couple of gigabytes just by installing an Internet suite, a personal finance management application, a few multimedia players, a video or photo editor, an antivirus program, a firewall application, and a handful of entertainment titles. Plus, digital images, MP3 files, text documents, email folders, and other personal data files will tack on at least a gigabyte more. All in all, you can expect to put more than 5GB—that's the equivalent of 40 billion individual bits—of data on your Windows drive (the drive on which Windows is installed).

That's not a problem. After all, hard drives are designed to accommodate mass quantities of data. But you may encounter system-wide slowdowns and crashes if you pollute your pool of good data with the debris of unwanted software, adware, spyware, junk files, and unnecessary startup items.

**Unwanted software.** The programs you choose to install on your PC will either benefit you or they won't. Unfortunately, you have no way of knowing which is the case until you have used them for a while, at which point you should make an effort to remove the unwanted ones from your computer.

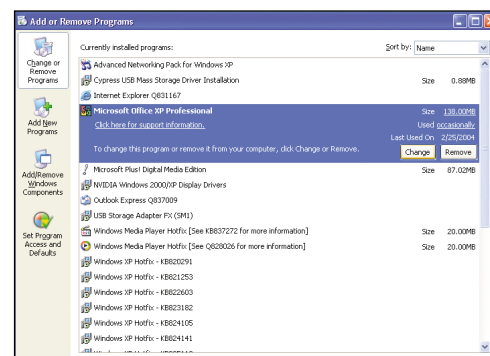
The easiest way to remove a program is by using the Add Or Remove Programs (called Add/Remove Programs in Windows 98 and Windows Me) utility, which you can access through the Control Panel (on the Start menu). When you open the utility, it will present a list of the programs currently installed on your PC. Simply highlight the one you want to uninstall and click the corresponding Remove (also labeled as Change/Remove or Add/Remove) button. Windows will delete the program and its settings from your PC. Upon completion, the utility may present a message indicating that it could not remove all the program's elements. Click the Details button to find out where the remnants reside so you can delete them manually from your system.

Users who want to take a more aggressive stance when removing

unwanted software, especially the programs that software developers released with no uninstall option, should consider a third-party uninstall utility. Such a utility springs into action when you first install a program. It takes note of every change that occurs during the installation and records this information in a log file, which resides in a secure location on the hard drive. When you eventually want to remove the program, the utility uses the information contained in the log file to restore your system to its prior condition.

Although most uninstall utilities ship as part of a larger suite, standalone products are available if you look hard enough. URSoft's Your Uninstaller! Basic (\$17.95; <http://www.pcfaster.com>) and Optimus Software's Trash It! (\$29.50; <http://www.optimussw.com>) are a couple of the standalone uninstall utilities currently available.

Just remember that it's not a good idea to delete a program by opening Windows Explorer to find what you *think* are the program's main files and



**With the Add Or Remove Programs utility, Microsoft makes it easy to eliminate the unwanted software that fills up a hard drive and slows down a system.**

delete them manually. This approach is almost guaranteed to cause trouble.

**Adware and spyware.** Getting rid of the software you chose to install is one thing; getting rid of the software that

was surreptitiously loaded onto your PC by someone else is another thing altogether. Such software, referred to variously as **spyware** (software that installs itself on a computer for the purpose of tracking a user's online behavior) and **adware** (software that generally collects information about a user in order to display targeted pop-up ads on the user's computer), not only slows down your browsing by stealing bandwidth for its own wily purposes, but it also may commandeer your Internet connection while you perform other computing functions or are away from your PC. Even worse, you may not know these programs are on your computer because spyware and adware developers design their programs to operate under the radar.

Another frustrating thing about adware and spyware is that they don't come equipped with any means of removal. Instead, you have to use a special utility, such as Lavasoft's Ad-aware (free; <http://www.lavasoft.de>), Spybot Search & Destroy (free; <http://spybot.safer-networking.de>), or Kephyr's Bazooka Adware And Spyware Scanner (free; <http://www.kephyr.com>), to eliminate them. These utilities will scour your system for adware, spyware, and any other program that isn't supposed to be there. Upon finding an intruder, the utility will notify you and then either remove it automatically or suggest a manual fix. See "Online Tool Time" on page 68 for more information about combating adware and spyware.

**Junk files.** It often takes hundreds or thousands of individual files to build a single computer program that works. An active computer user can generate hundreds more simply by using those programs. So what's the big deal if you have a couple of junk files (any file with no discernible purpose, such as a TMP [temporary] file or an orphaned data file) hanging around on the hard drive, too?

Nothing, if the number of junk files amounted to two or three in total. But the fact is that your system probably

has several thousand of them clogging up the hard drive at any given moment, and new ones keep popping up all the time. (You can acquire junk files by Web surfing, shutting down the PC prematurely, and uninstalling software, among other things.) The mere presence of these junk files wouldn't be so disconcerting if all they did was consume space, but their mere presence makes it more difficult for the computer to find the files it actually needs, thereby hindering PC performance.

The solution, of course, is to remove the junk files from the hard drive. Fortunately, Windows includes a utility designed for this purpose: Disk Cleanup. The Disk Cleanup utility (accessible by clicking Start, All Programs, Accessories, and System Tools) will help you remove TMP files (including temporary Internet files), application debugging data, and other common junk files contained on your system. All you have to do is select which type of files you want to remove and click OK. Disk Cleanup takes care of the rest.

Disk Cleanup can eliminate most of the junk on your system, but it won't get everything. Duplicate files, broken shortcuts, and orphaned uninstall files will sneak past Disk Cleanup every time you use it. In order to remove these types of junk files, consider using a third-party utility, such as Pointstone Software's System Cleaner (\$29.95; <http://www.pointstone.com>) or AceLogix Software's Ace Utilities (\$29.95; <http://www.acelogix.com>). In addition to deleting all of your junk files, these standalone utilities can protect your privacy by cleaning out your Internet history folder and overwriting junk files up to 10 times (before deleting them for good) so that it's nearly impossible to recover them.

**Unnecessary startup items.** When you boot a computer, it goes through a complex routine that involves identifying

the processor, testing the hardware components, loading Windows, and launching the applications contained in the Startup group. It's this last part that can put a drag on your system, especially if the Startup group is overrun with programs you don't need.

You can expedite the startup routine by trimming these unnecessary programs from the Startup group. Once again, Microsoft provides a utility in Windows that can help you accomplish the task. Open the Start menu, select Run, type **msconfig** in the field, and click OK to access the System Configuration Utility. Choose the Startup or Startup Group tab to view a list of the programs that launch each time you boot into Windows. Deselect the ones you don't need, such as RealPlayer Scheduled Updates and Microsoft Office StartUp, and click OK. See "Wring Out The Registry" on page 65 for more information about the System Configuration Utility.

If you want to exercise greater control over the Startup group, then you should try a





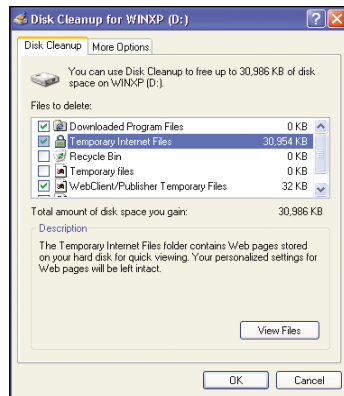
third-party utility, such as Mike Lin's Startup Control Panel (free; <http://www.mlin.net>) or MetaProducts' Startup Organizer (\$25; <http://www.metaproducts.com>). These products let you set the order in which programs open, configure the startup routines of other user accounts, and disable individual programs on a per-boot basis simply

by activating key commands during the startup routine. They also can alert you to the presence of programs that act like spyware or Trojan horses.

Whichever utility you choose, keep in mind that the startup routine should include programs that protect your system and automate crucial tasks. You should never remove your antivirus utility from the Startup group, for instance. Ditto for programs that control system functions, such as System Restore and the default power profile. We advise you to reboot the system immediately after disabling a program in the Startup group so that you can determine what effect, if any, the change has on your PC. Undo the change if you experience problems.

### Organization Equals Speed

One of the unintended consequences of cleaning a hard drive is that you leave gaps all over the platters. These gaps have a negative effect on PC performance. Here's why: When a computer begins the process of writing data to a drive, it strategically positions the data on the drive's platters for efficient retrieval. It continues in this mode until the user chooses to delete a program or file. When this happens, a gap emerges. The next time the computer writes data to the drive, it fills the gap with the new data. The data that fills a gap is often a fragment of a larger collection of related data.



**The first time you run the Disk Cleanup utility in Windows, you might be surprised at how much space temporary Internet files occupy. Delete them to improve your PC's performance.**

As you might expect, it takes longer for the computer to retrieve multiple fragments than to fetch a unified body of data. You can expedite retrieval speeds by reorganizing the hard drive with the purpose of eliminating fragments. To execute this process, called defragmentation, use the Disk Defragmenter utility that ships with Windows.

Access the utility by opening My Computer, right-clicking the drive's icon in the resulting window, and selecting Properties. When the dialog box appears, choose the Tools tab and click the Defragment Now button. You can expect to wait an hour or longer for the defragmentation process to finish.

As an alternative to Disk Defragmenter, you can use an automated defragmenter, such as Executive

Software's Diskeeper (\$29.95; <http://www.execsoft.com>) or Buzzsaw On-The-Fly Defragmenter (free; <http://www.dirms.com>). Such a utility runs on a schedule, defragging the hard drive in the background and strategically positioning new data for efficient retrieval.

### Maintenance Matters

Cleaning a hard drive of weeks, months, or years of debris is the easy part. Keeping it clean takes some work. For optimum system performance, you should devise a plan for cleaning your drive on a weekly or monthly basis and defragmenting the drive at least once per year. Couple the cleaning regimen with regular system maintenance (see "Maintenance & Customization" on page 72 for details) to ensure that you're getting the full benefit of your effort. You should see immediate results in the form of fewer errors, fewer crashes, and faster performance. ■

BY JEFF DODD

## The Big Boys

When selecting drive optimization software, the most economical option often turns out to be the Windows utilities that come bundled with Microsoft's various OSes (operating systems). Indeed, we suggest that average computer users forego the costly third-party utilities and spend time acquainting themselves with Add Or Remove Programs, Disk Defragmenter, Disk Cleanup, and the other Windows utilities. These utilities do an adequate

job of servicing the typical PC. And they're free. You can't ask for a better deal than that.

Another bargain, especially for advanced users who need the extended functionality of third-party utilities, is a drive optimization suite. For only slightly more than the price of a couple of standalone utilities, users can buy a product such as Aladdin Systems' Spring Cleaning For Windows (\$29.99; <http://www.aladdinsys.com>), the Ashampoo WinOptimizer Platinum

Suite (\$49.99; <http://www.ashampoo.com>), or McAfee QuickClean (\$24.99; <http://www.mcafee.com>) that handles multiple tasks, such as uninstalling software, removing junk files, and more.

Whichever option you choose, we strongly encourage you to take advantage of the free anti-adware and anti-spyware utilities currently available on the market. These utilities perform an invaluable service you won't get anywhere else. ■

# Wring Out The Registry

## Database Of Settings Needs Periodic Cleansing

If you think of your computer as a book, then the Registry would be the dictionary that defines the words used to write it. By changing the definition of a single word, you can alter the gist of the entire book. Likewise, you can transform the functionality of an entire system merely by modifying one value in the Registry. This vast database of system settings and user preferences gives meaning to everything that takes place on-screen.

But it also can cause problems. Just as the quality of a book suffers if its author relies on a dictionary filled with gibberish and incorrect definitions, so too does PC performance deteriorate when the Registry is laden with errors and

files, such as Win.ini and System.ini, to define and retain the settings that made the PC hum. With the release of Windows 95, Microsoft engineers wisely decided to consolidate the burgeoning collection of INI files into a centralized database. They used an existing file, a catalog of file associations known as the Windows Registration Database, as the basis for the new Registry.

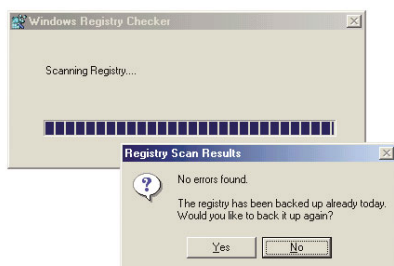
The Registry has changed little since then. In addition to file associations, it also keeps track of most system settings, software and hardware configurations, and user profiles. It helps prevent conflicts when you install new applications and uninstall old ones. It lets you set up a notebook for docked and undocked configurations.

It facilitates the sharing of a single computer by multiple individuals. Quite frankly, the Registry deserves much of the credit for making com-

as HKEY\_CLASSES\_ROOT and AppEvents. The values (Registry settings) themselves prove equally confusing as they are often represented with alphanumeric codes, such as 0x0000e801 (59393) and {EAB841A0-9550-11cf-8C16-00805F1408F3}.

Unfortunately, casual computer users who want to optimize PC performance must roll up their sleeves and clean out the Registry from time to time. Like the rest of a system, the Registry accumulates its share of junk settings. Uninstalled programs leave behind orphaned keys and values, for instance, bloating the Registry and resulting in sluggish system performance during the startup routine. Value errors can occur if a program is improperly shut down or a device driver (a small program that enables a hardware component to communicate with the rest of the system) becomes corrupted. Such problems may result in error messages and crashes.

Trimming the fat from the Registry is tricky business. It takes confidence, competence, and patience to navigate the expansive database, correctly identify trouble spots, and modify values. Making matters worse, Registry mistakes are easy to commit and difficult to undo. The improper placement of a single digit in a Registry setting can spell the difference between cure and crisis.



**When using Scanregw (Windows Registry Checker) to back up the Registry in Windows 98 or Windows Me, you may receive a message indicating that the Registry was already backed up. This is not an error. Windows backs up the Registry by default each time you start the computer. Click Yes to continue with the backup.**

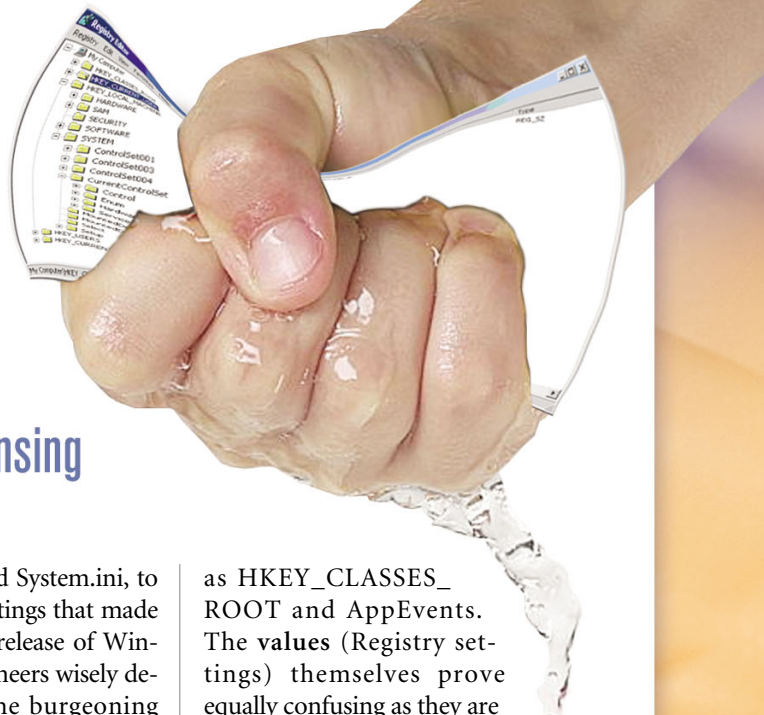
outdated data. One of your responsibilities as a PC owner is to take whatever measures are necessary to ensure that it remains sleek, clean, and efficient.

### Registry Background

Early Windows versions didn't have a Registry. These OSes (operating systems), which ran on top of a DOS foundation, relied on INI (initialization)

puters easier to use.

And yet it also represents one of the most intimidating components of Windows. Why? Essentially, it's because Microsoft designed the Registry for programmers. Casual computer users are easily overwhelmed by its complex hierarchical system of keys (folders of related settings) and hives (folders of related keys), many of which have nonsensical names, such



That's why it helps to have an arsenal of reputable Registry utilities at your disposal.

### Hedge Your Bets

Before making any changes to the Registry, it's critical that you take a few minutes to back it up. Doing so ensures that you have a way of recovering from accidents that may occur as you clean the Registry. Fortunately, Microsoft provides a manual Registry backup method for each of its Windows OSes.

If you use Windows XP, you can back up the Registry with help from the built-in Backup utility. (From the Start

menu, click All Programs, Accessories, and System Tools.) When the Backup utility opens, choose Advanced Mode. Select the Backup Wizard (Advanced) button in the resulting dialog box. Click Next, choose the Only Back Up The System State Data option, and click Next. Follow the instructions to specify a name and location for the Registry backup file and then finish the backup. To restore the Registry backup, locate it on your system and double-click it. Follow the instructions provided by the resulting Backup Or Restore Wizard to complete the restoration.

If you use Windows 98 or Windows Me, you can back up the Registry by

opening the Start menu, selecting Run, typing `scanregw` in the field, and clicking OK. When the Windows Registry Checker dialog box appears on-screen, verify that you want to back up the Registry and wait for the backup process to finish. The backup is stored as one of five `RB0*.cab` files in the `WINDOWS\SYSBCUP` folder on the Windows drive (the drive on which Windows is installed). Note that this method only backs up the Registry for the current user profile.

To restore an `RB0*.cab` file, hold down the CTRL key while rebooting the computer (in Win98) or boot with a Startup Disk (in WinMe). When the

## Master The System Configuration Utility

Users experiencing trouble with the boot routine can diagnose the cause of their problems with a little help from Windows' System Configuration Utility. This utility lets you review the settings and commands that load during the boot routine, identify the ones you don't need or that cause problems with your system, and then disable the undesirables. It's a built-in troubleshooting component of the latest Windows versions.

To access the utility, open the Start menu, click Run, type `msconfig` in the field, and click OK. The System Configuration Utility contains several tabs of settings and commands. These are the hundreds of settings and commands that Windows processes each time you boot the computer. The ones with check marks next to them will load during the boot routine.

To take advantage of the System Configuration Utility,

start by focusing your attention on its General tab. This tab lets you specify the type of startup routine you want Windows to run when you boot the computer. The default option is Normal Startup. Under this option, all of the settings load as usual. The Diagnostic Startup option instructs Windows to inform you of each item it intends to load during the boot routine so that you have the option of accepting or declining it. Finally, the Selective Startup option lets you specify which settings or commands will load the next time you start the computer. You should choose the Selective Startup option if you need to troubleshoot the boot routine.

Now it's time to decide which items should load during the boot routine. Each of the options in the list corresponds to a separate tab of settings and commands in the System Configuration Utility. You

should deselect one of the items in the list, click OK, and reboot the PC. If the computer continues to boot slowly or encounters the same problems you experienced previously, return to the General tab and deselect another group of settings and commands before rebooting the computer again. Repeat this process until you notice a marked improvement in the boot routine. At that point, you can deduce that the source of the trouble lies with the group of settings and commands currently disabled in the System Configuration Utility.

After narrowing the source of the problem to a particular group, choose the corresponding tab in the System Configuration Utility to start the process of identifying the particular setting or command that is causing the trouble. You may have to reboot your PC many times to zero in on the source. After you find it, disable it and close

the System Configuration Utility. The setting or command will no longer load during the boot routine unless you reopen the System Configuration Utility and place a check mark next to it.

Users who want to take even more drastic action to expedite the startup routine should consider investing in a third-party startup configuration utility, such as URSoft's Startup Faster! (\$29.95; <http://www.pc-faster.com>) or OpenSoft's Startup Mechanic (free; <http://www.startup-mechanic.com>). These programs monitor the boot routine and remove unwanted components, including adware and obsolete programs. You may be able to get similar capabilities from other utility suites. For instance, iolo technologies' System Mechanic (\$49.95; <http://www.iolo.com>) includes a Startup Manager component designed to optimize your boot routine. ■

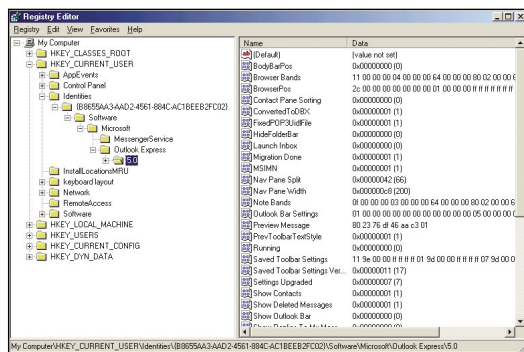


Startup menu appears, select the Command Prompt Only option. At the command prompt, type `c:` and press ENTER. Next, type `cd \windows\command` and press ENTER again. Finally, type `scanreg /restore` and press ENTER a third time. Follow the on-screen instructions to select the Registry you want to restore. Reboot the computer when the restoration is complete.

## Spic & Scan

When it's time to clean the Registry, you have several options to consider. The default option is to use the Registry Editor, which comes bundled with Windows. This utility provides a simple interface for viewing, editing, and deleting the hives, keys, and values that constitute the Registry. To access it,

All it takes is a peek inside the Registry Editor to get a basic idea of how the Registry is configured. The hierarchical arrangement of hives and keys appear in the left pane; corresponding values appear on the right.



open the Start menu, click Run, type `regedit` in the field, and click OK.

All Windows users should acquaint themselves with the Registry because it offers a painless glimpse at the thousands of user preferences and system settings that keep a PC running the way a user wants it to run. Unfortunately, it has little else to offer. Although advanced users frequently use the point-and-click utility to modify a particular value here and there, a whole-scale Registry cleaning and optimization demands more than the Registry Editor is capable of giving.

The solution is to invest in a third-party Registry cleaning utility, such as Innovative Solutions' Innovative System Optimizer (\$24; <http://www.innovative-sol.com>), WinGuides'

Registry Mechanic (\$29.95; <http://www.winguides.com>), AceLogix Software's Registry TuneUp (\$19.95; <http://www.acelogix.com>), ChemTable Software's Reg Organizer (\$29.95; <http://www.chemtable.com>), and WinASO's Registry Optimizer (\$28; <http://www.winaso.com>). These utilities are designed to scan the Registry in search of keys and values that refer to uninstalled applications, obsolete file extensions, and orphaned device drivers, among other things. The utilities then will present a list of their findings so that you can delete the ones you don't want.

Registry cleaners also typically have Registry and system file backup capabilities, Registry editing capabilities similar to those that the Registry Editor provides, as well as search capabilities so you can manually remove all keys and values related to a particular app or component. In addition, many include startup management features so you can review and choose which programs load automatically each time you boot your PC.

For even better results, look for a utility that supports Registry defragmenting, too. Such utilities, including Systweak's Advanced Registry Optimizer (\$29.50; <http://www.systweak.com>) and Optimize Your PC's Registry Doctor (\$29.95; <http://www.optimizeyourpc.com>), compress the Registry file when the cleaning is complete. The result is a compact Registry that, at least in theory, should load faster than an oversized Registry toting around a lot of empty space left over by deleted keys and values.

## Proceed With Caution

Configuring the Registry remains one of the most effective ways of enhancing PC performance; it also

# The Big Boys

As is often the case, you get more value for your money by investing in a suite of system optimization utilities rather than buying standalone products. Such suites not only clean and repair the Registry, but they also typically support hard drive optimization, software uninstallation, secure file removal and cleanup, and more.

System optimization suites differ from one another in both price and functionality. A typical product, such as McAfee's QuickClean (\$29.99; <http://www.mcafee.com>), sticks to the basics described in the previous paragraph. V Communications' Fix-It Utilities (\$49.99; <http://www.v-com.com>), on the other hand, includes an antivirus program, as well as a Registry cleaner and other utilities. And iolo technologies' System Mechanic (\$49.95; <http://www.iolo.com>) supports anti-adware and anti-spyware capabilities in addition to its clean-and-repair capabilities.

When selecting a suite, be sure to compare its features to any system maintenance, drive optimization, or system security titles you already own. Avoid overlap between products if you can. Doing so minimizes the likelihood of conflicts and guarantees that you pay only for what you need. ■

remains one of the most dangerous. Whether you use Windows' built-in Registry Editor or a commercial utility suite, you must be extremely careful. Just as a good novel depends on the author's ability to choose the right words, a healthy system depends on your ability to configure and clean the Registry correctly. ■

BY JEFF DODD

# Online Tool Time

## Stock Your Internet Toolbox With Some Useful Utilities

**S**urviving in almost any environment without the proper tools is a dicey proposition. If you don't believe that, try trudging across an icy Arctic landscape without snowshoes, or scaling a mountain without ropes, or hiking through the desert without sunscreen. In all their myriad shapes and forms, tools play such a large part in completing tasks and preventing or solving problems that it's tough to imagine living without them wherever you go—even if you're just going online.

As the Internet continues to sap increasingly more time from our busy schedules, we grow ever more reliant on tools that can help make the most of our online time. Whether it's a tool that manages massive downloads or one that keeps our passwords tidy and

safe, we need tools to make our online travels efficient, secure, and organized. Let's crack open the digital toolbox and see what's available to make your journey a smooth one.

### Download Managers

There's little more frustrating than downloading a massive file only to have your connection flake out before you finish. Sure, you can try to download the file again, but starting from scratch isn't fun, especially if you're using a dial-up connection that's hard-pressed to beat a snail in the speed department. Download managers ease this frustration by resuming interrupted downloads,

even if you lose your Internet connection altogether and need to reconnect.

**Download Express.** MetaProducts' Download Express (free; <http://www.metaproducts.com>) works as an Internet Explorer plug-in that resumes broken downloads and uses multiple channels to increase your download speed. The utility intercepts files with extensions such as .EXE, .MP3, .MPG, .ZIP, and others to set the download process in motion. Download Express features an easy-to-navigate interface that lets you watch the progress of your downloads and tweak program options, such as the size of the downloading channels. You also can connect the utility to your antivirus software so downloaded files automatically receive a virus scan.

**LeechGet.** Billing itself as "The Ultimate Download Utility," LeechGet (free; <http://www.leechget.net>) comes pretty darn close to being the perfect downloading companion. LeechGet blends a wealth of downloading tools into a familiar interface that's a breeze to use, even if it's your first time using a download manager. Even more helpful are the bundled wizards that guide you along the configuration path, and once your downloads are active, you can watch their progress in the SpeedMeter window. You also can specify how much bandwidth you'd like LeechGet to apply to either all of your downloads or individual downloads.

**GetRight.** Loaded with options that aim to ensure stress-free downloading, Headlight Software's GetRight (\$25; free trial available; <http://www.getright.com>) is a reliable tool. Not only will the software continue downloading a file if the download stops at any point, it also can redial your modem and shut off your PC after receiving files. If that's



not enough, you can even set it to dial your modem to retrieve files at a particular time (which is especially handy for middle-of-the-night downloads), and you can set priority levels on files so GetRight will grab what you need first.

**Fresh Download.** Freshdevices' Fresh Download (free; <http://www.freshdownload.com>) includes a bevy of tools to get you on the right track toward successful downloading. Like other

annoying pop-up and pop-under ads without interfering with user navigation. Also included is Banner Blocker, which blocks annoying ad banners and flash animations that can interfere with your surfing experience, complete with presets for popular sites. Spam Fighter Pro offers multilevel spam protection that lets you catch spam through a series of filters. All-in-One Secretmaker also includes Worm Hunter, which keeps you from inadvertently emailing worms to friends; Privacy Protector, which hides your computer's information on a network; and tools for deleting cookies, cleaning your Internet history, and deleting temporary files.

fact, it'll even block some windows that you do want to view, but you can customize the software to let certain content types make it through for seamless browsing. (Or at least you can try. STOPzilla claimed our CoolMon Desktop utility was a parasite and blocked it, so we accessed the entry on STOPzilla's Black List, right-clicked it, and clicked Allow Selection. Nonetheless, the next time we ran CoolMon, STOPzilla blocked it again.) STOPzilla also includes an integrated cookie killer, history eraser, adware blocker, and spyware stopper, although if adware or spyware slips by STOPzilla, you'll need to use a dedicated adware/spyware remover to delete it (which we'll discuss later in this article). If you have a serious problem with pop-ups that other utilities can't fix, STOPzilla is a good solution for stopping almost everything.

**TrueBlock.** If you want seamless, relatively unintrusive pop-up blocking, check out TrueSuite's TrueBlock (free; <http://www.truesuite.com>). Unlike other utilities that adopt a kitchen-sink mentality toward protecting your PC, TrueBlock focuses exclusively on pop-ups that appear while surfing with IE.

utilities in this category, Fresh Download resumes broken downloads or pauses them upon request, uses multiple simultaneous connections to grab a single file, and offers scheduling so you can acquire files during less busy periods. You also can download from password-protected sites using both HTTP (Hypertext Transfer Protocol) and FTP (File Transfer Protocol), scan downloaded files for viruses using your antivirus software, and use a built-in extractor for zipped files.

## Pop-Up Blockers

If you browse the Web without pop-up protection, good luck. You're going to need all the patience you can muster to survive the inevitable bombardment of ads that materialize on-screen. You can avoid this hassle by using a pop-up blocking utility that stops the little monsters. Today's pop-up blockers use smart filtering to block annoying pop-ups and allow needed content.

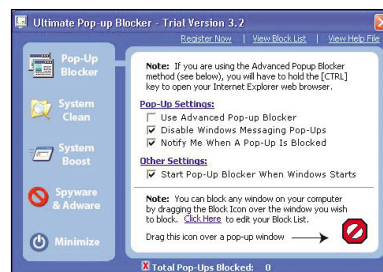
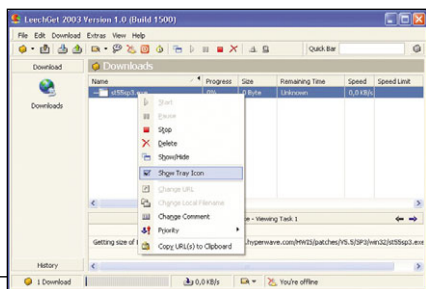
**All-in-One Secretmaker.** The Secretmaker team jammed an amazing set of eight tools into the nifty All-in-One Secretmaker (free; <http://www.secretmaker.com>), and the best part is that the suite is free. For starters, PopUp Killer works by automatically blocking all

**Ultimate Pop-up Blocker.** WebSafe Software's Ultimate Pop-up Blocker (\$19 one-time fee after 15-day trial; <http://www.remove-popups.com>) is a relatively unobtrusive utility that sits quietly in your Taskbar and waits for pop-ups. You can easily configure the utility to notify you when it blocks anything, or you can set it to do its job without alerting you. Ultimate Pop-up Blocker includes the ability to simply drag and drop an icon from the utility's window directly onto a window you'd like it to block in the future. The bundled X-Cleaner tool claims to scan for and remove spyware and adware, but it didn't seem to accomplish much in our tests. Some basic system cleaning tools, as well as a collection of Windows Registry tweaks designed to boost system and Internet speeds, are also included.

**STOPzilla.** With a set of integrated tools that can help keep your computer free of annoying online beasties, STOPzilla (\$29.95 per year after 15-day trial; <http://www.stopzilla.com>) strives to be an all-in-one browser guard. STOPzilla's main attraction is its pop-up blocker, which blocks just about every pop-up you can encounter. In

Once installed, this plug-in appears in the IE toolbar, and from there, you can choose to enable or disable TrueBlock for each site. You also can choose whether TrueBlock should allow pop-ups from secure sites or whether the utility should play a sound each time it blocks a pop-up. Although the utility does a decent job of blocking pop-ups, if you already use the Google Toolbar (free; <http://toolbar.google.com>) or Yahoo! Companion Toolbar (free; <http://companion.yahoo.com>), just use the pop-up protection included with

LeechGet's no-nonsense interface and easy configuration make downloading files a breeze, even if your downloads get interrupted midway through the process.



With Ultimate Pop-up Blocker, you can block pop-up ads, clean your system, and even employ some Windows Registry tweaks.



either of those utilities because both of them work just as well as (or better than, in some instances) TrueBlock.

### Adware & Spyware Removers

Adware and spyware are intrusive and prying, secretly reporting your actions and system data to a third party somewhere on the Internet. Although some of these programs make an honest effort to collect only information that can help optimize related software, most adware and spyware aren't quite so noble. Removal programs can locate and terminate adware and spyware, just like antivirus programs can find and remove viruses.

**Ad-aware.** One of the most popular freeware programs in recent history, Lavasoft's Ad-aware (free; <http://www.lavasoftusa.com>) is a primary weapon for fighting adware and spyware on any PC. Featuring a reference database that's updated regularly, Ad-aware works by scouring your hard drive for known adware and spyware, and when it completes the search, it lets you decide which programs to delete or keep. Ad-aware automatically quarantines deleted items, so if you run into system problems after deleting an adware program, you can restore it at any time. Ad-aware has impressive depth for a free utility, as a jaunt through the program's settings will reveal. You can customize just about every aspect, including options for Windows startup, quarantine action, log files, archive scanning, file size scanning, memory and Registry scanning, and more.

**Spybot Search & Destroy.** If you don't feel safe enough using Ad-aware alone, you can further bolster your adware and spyware defense by using another effective, free utility. Patrick M. Kolla's Spybot Search & Destroy (free; <http://www.safer-networking.org>) works similarly to Ad-aware, scanning



**Consider your adware and spyware problems gone if you're using Spybot Search & Destroy, which scours your PC for intrusive code and eliminates it.**

and removing any adware and spyware it detects. In addition to its removal abilities, Spybot includes an Immunize feature that provides permanent protection against spyware installers. Spybot also lets you recover any deleted data in case of system instability caused by the removal process.

**Spy Sweeper.** Webroot's Spy Sweeper (\$29.95 after 30-day trial; <http://www.webroot.com>) isn't free like the other utilities in this category, but it's similarly effective and easy to use. Scanning your system is as simple as clicking a button, and anytime Spy Sweeper finds spyware or adware, you can choose to always keep it or always remove it, which means that the utility will automatically handle the spyware the next time it encounters it. Spy Sweeper also includes a thorough spyware knowledge base that lets you see the spyware category, method of infection, risk analysis, and recommended action for the spyware by right-clicking the listing. Real-time protection automatically alerts you when spyware becomes active in memory.

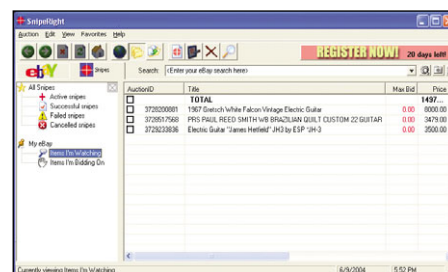
### Auction Snipers

If you enjoy the thrills of online auctions, you know how frustrating it can be when someone outbids you at the end of an auction or when all of your maximum auction bids are bumped to their limits. If this describes you, it's time to enlist the help of an auction sniper, which can place bids to beat last-second bidders and save you from monitoring every auction as it ends.

**Auction Sentry.** If you're an auction enthusiast, you'll appreciate the loads of

tools at your disposal in Auction Sentry (\$14.95 after 10-day trial; <http://www.auction-sentry.com>). This utility watches and displays your auctions and lets you know when something happens in any of the auctions it's watching; if the program window is minimized, it'll even pop back up to alert you. In addition, you can instruct it to bid snipe for you by configuring time-delayed bids that occur right before the auction ends. Auction Sentry synchronizes your PC's internal clock with eBay's clock so that your bids are perfectly timed with eBay's auctions. Also included are free automatic program updates and a context-sensitive help system.

**SnipeRight.** With a built-in browser and a clean interface, SnipeRight (\$19.95 after 20-day trial; <http://www.sniperight.com>) makes auction management easy. After bookmarking auctions on your Favorites menu, you can schedule or edit a snipe by right-clicking the auction. Because SnipeRight uses agents on its servers to do your bidding, you don't even need to keep your computer running for the software to make bids, and the company claims the timing of its bids is



**Not only can you keep track of your auctions with SnipeRight, but you also can use the tool to automatically place bids for items at the last second.**

accurate to within milliseconds. You can also keep track of your auction activity by tracking those you won and those you received, and SnipeRight will even leave automatic feedback for completed auctions, if you wish.

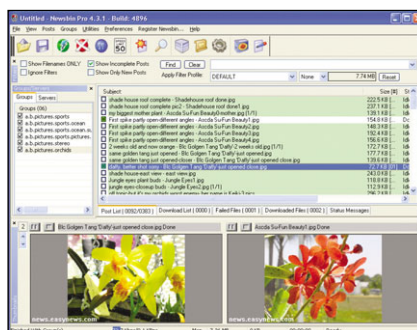
### Newsreaders

Whether you're new to Usenet discussions or a seasoned veteran, you need a good newsreader to navigate the thousands of available newsgroups. Although Outlook Express includes

a basic newsreader, dedicated news-readers handle Usenet discussions and binary files more intuitively, particularly when it comes to downloading.

**Agent.** One of the most popular newsreaders, Forté's Agent (\$29 after 30-day trial; <http://www.forteinc.com>) is a good choice for Usenet readers looking for great performance without an overload of bells and whistles. Agent's interface includes a basic three-pane window for groups, threads, and messages, and you can sort within the thread window by size, subject, author, and more. The program easily handles both multilevel message threading (using the subject and message ID) and multipart binaries by representing multiple parts as a single post for easy downloading. A fully integrated email client and support for the yEnc encoding algorithm are also included.

**Newsbin Pro.** Another solid contender is Newsbin Pro (\$35 after 15-day trial; <http://www.newsbin.com>), a program aimed primarily at downloading and decoding binary file attachments. Newsbin's interface is a bit more modern than Agent's interface, though the larger, fancier icons tend to eat space you could be using to



**Usenet posts take on a whole new life with Newsbin Pro, which shows you instant thumbnails of binary pictures and lets you download files across multiple servers.**

## Password Keepers

If you have slips of paper here and there jammed with passwords for all of your online accounts, or if you go batty trying to remember passwords, you're not much different from anyone else. Because most of us now own a throng of online accounts that all use different passwords (or *should* be using different passwords), it's best to use a secure password program that can keep track of all of your passwords in one secure spot.

**Password Safe.** Password Safe (free; <http://www.schneier.com/passsafe.html>) is an easy-to-use, open-source program that uses the popular, *über*-secure Blowfish algorithm to keep your passwords safe from prying eyes. To use Password Safe, simply enter a single safe combination (a password itself) to gain access to your password database. Once inside, you can easily add entries by clicking an icon, entering a title, and adding a username and password. To

grab the password in the future, simply double-click the title entry to place the password on your Clipboard and paste it into the password field online (or wherever you need the password).

**Norton Password Manager.** Not only will Symantec's Norton Password Manager (\$39.95 after 15-day trial; <http://www.symantec.com>) keep track of your passwords and other sensitive data, it

will watch for online forms and programs that require passwords and fill them in after prompting you. Password Manager can fill in such details as your name, address, phone number, email address, and credit card numbers. With the User Profile Setup Wizard, multiple users can create data profiles that let them store their own passwords and form information, and separate profile passwords keep the information exclusive to each user. An included password strength meter helps you determine whether your passwords are sufficiently strong, and security levels determine how often Password Manager will challenge users for their profile passwords.

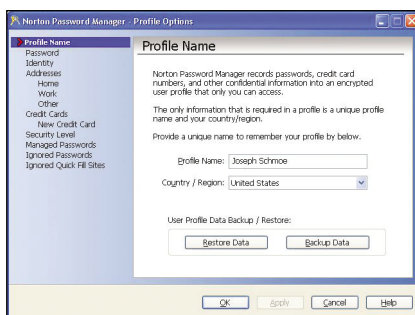
**RoboForm.** Siber Systems' RoboForm (free; <http://www.roboform.com>) is a popular password manager and Web form filler that uses 3DES (Triple Data Encryption Standard) encryption for security and AI (artificial intelligence) techniques to streamline the form process. All identities and passwords are secured by a single master password, and each identity can hold different information for multiple users. Using selective form filling, you can instruct RoboForm to complete just a part of a form instead of the whole thing by simply selecting the fields and clicking the Fill Forms button.

## The Right Tools For The Right Jobs

Unlike the bolt that requires a specific wrench, Internet tasks are so open-ended that you can often choose from multiple tools to decide which works best. In some cases, you're actually better off using more than one tool to complete tasks—this is particularly true when hunting spyware and adware, as experience shows that a combination of Ad-aware and Spybot Search & Destroy works wonders for keeping your system clean. Even if the first tool you install and use seems adequate, don't hesitate to try different tools because the next one you try might have functions that serve your needs even better. ■

BY CHRISTIAN PERRY

**Symantec's Norton Password Manager fills in online forms with ease. It also stores passwords and form details for multiple users using separate profiles.**



view messages. The program permits multiple simultaneous connections to a server (or servers) and can assemble multipart binaries from different servers. Real-time rendering of thumbnails means you can see image attachments immediately, and with its detection of corrupted posts, you won't waste your time downloading files that don't work.

# Maintenance & Customization

## Optimize Your System With Routine Tasks & Personalized Settings

**D**ieters and athletes know all too well the importance of ongoing maintenance in their struggle to achieve an ideal physique. These individuals must remain committed to a regimen of healthy eating and exercise if they want to persevere in their dieting and achieve athletic success. It only takes a few months of excessive eating and idleness to undo years of discipline and training.

Likewise, computer users who expect optimal PC performance at all times must stick to a strict maintenance schedule. They also should customize their system's settings and capabilities to better meet their needs. Fortunately, a multitude of built-in Windows tools

and third-party utilities promise to help bear the burden of such tasks.

### Manage System Maintenance

The prospect of setting up a comprehensive system maintenance routine can seem daunting. It involves around-the-clock virus protection (see "Virus Vice Squad" on page 58), vigilant Internet safeguards (see "Online Tool Time" on page 68), as well as periodic cleaning of the hard drive and Windows Registry (see "Get Rid Of The Gunk" on page 62 and "Wring Out The Registry" on page 65). It also requires that you regularly scan the hard drive for errors and optimize the memory.

**Scan for drive errors.** As the primary repository for a system's data and program files, the hard drive is an integral part of everything that happens within a computer system. It doesn't matter whether you're playing a game of solitaire, surfing the Web, viewing a digital snapshot, or reading a text document: The flow of data in and out of the hard drive is almost constant. Most of the time, this flow continues without a hitch. But faulty bits of data occasionally work their way into the incoming and outgoing streams. Data corruption, file loss, error messages, and drive crashes may occur when this happens.

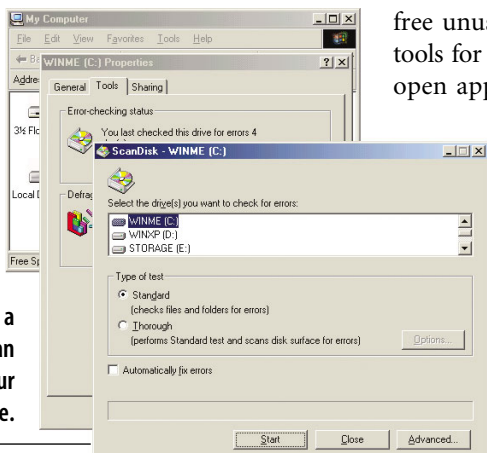
A tool you can use to avoid much of this is a built-in Windows utility called ScanDisk, which scans the hard drive for the presence of **bad sectors** (drive areas that cannot hold data, primarily due to physical deterioration of the storage media), **lost clusters** (storage areas that the hard drive mistakenly assumes are in use), **cross-linked files** (two or more files that try to occupy the same part of a drive), and other drive errors. You can access ScanDisk by opening My Computer, right-clicking the icon representing the Windows drive (the drive on which Windows is installed), clicking Properties, choosing the Tools tab, and clicking the Check Now button under the Error-Checking (or Error-Checking Status) heading. The utility will fix any errors it detects.

**Memory optimization.** RAM serves as a temporary holding area for open programs and data files. Whenever you open a program or file, Windows copies





ScanDisk gives you the option of performing a Standard or Thorough check. You can expect a Thorough scan to take an hour or more.



the relevant code from the hard drive to RAM, where it resides until you close the program or file. The only problem is that some programs have trouble letting go of memory after sinking their hooks into it (a condition known as a **memory leak**). As a result, RAM gradually becomes engorged on the remnants of programs and files that are no longer open. The eventual outcome is an increasing number of out-of-memory errors, program crashes, and memory-related predicaments. Memory leak is most likely to strike PCs running Windows 98 or Windows Me, neither of which has advanced memory management capabilities like Windows XP.

To address these issues, use a memory optimization utility, such as AceLogix Software's Free Ram Optimizer XP (free; <http://www.acelogix.com/freeware.html>), YourWare Solutions' Free-RAM XP Pro (free; <http://www.yourwaresolutions.com>), and Iomatic's RAM Medic Free (free; <http://www.iomatic.com>). Freeware memory utilities such as these focus on the basic task of releasing memory and tend to run in the background so as not to interfere with your productivity.

For extensive memory management, invest in a full-fledged memory maintenance utility such as Software Benefit's MemoKit (\$29.95; <http://www.memo kit4all.com>), DMK's Memory Optimizer Pro (\$29.95; <http://www.dmk.ca/index2.html>), and Systweak's Memory Zipper Plus (\$18.95; <http://www.systweak.com>). These products not only

free unused memory but also provide tools for tracking the memory usage of open apps, identifying programs that cause leaks, defragmenting unused memory, and configuring **virtual memory** (an area of the hard drive set aside by Windows to supplement RAM).

**Wait, there's more.** So far, we've listed utilities that scan for drive errors or perform drive optimization, but your best bet for system maintenance may be to invest in a system optimization suite.

Each suite provides various tools to keep your system running smoothly. The features vary from title to title so carefully consider your options before purchasing a product. Find a suite that meets your needs without overlapping the functionality of other utilities already installed on your PC. Three of the most popular suites are:

- Symantec's Norton SystemWorks (\$69.95; <http://www.symantec.com>), a set from the godfather of maintenance, includes an antivirus utility, a password manager, a drive cleaner, a storage manager, an uninstall utility, and an Internet optimization utility.
- iolo technologies' System Mechanic (\$49.95; <http://www.iolo.com>) is a critically acclaimed bundle of utilities that automate maintenance chores, optimize hard drive and memory performance, boost startup speeds, accelerate Internet access, remove unwanted files and software, and eliminate adware and spyware.
- MindSoft Utilities (\$32.13; <http://www.mindsoft.es/english>), a broad-ranging suite covers drive maintenance, memory management, program removal, Internet acceleration, and file recovery.

### The Craft Of Customization

Just as important as system maintenance is the process of tweaking a PC's existing settings and adding new settings to suit your particular needs. Such

tweaking and customization helps you get the most from your system.

Windows provides plenty of ways to customize your PC. Just open the Control Panel and click any of the icons found inside to access a dialog box full of preferences and settings. For example, you can change your Desktop's appearance, modify power settings, and alter mouse settings to suit your physical skills. Straightforward descriptions and point-and-click accessibility make these built-in options the ideal starting point for new Windows users.

Users with more experience, however, will soon outgrow the limited capabilities of the Control Panel. These users can expand their options by manually configuring some of the advanced settings hidden deep inside the **Registry** (a Windows database of system settings and user preferences), such as modifying how the Control Panel's contents display on the Start menu or hiding the name of the last user to log on to the system. But editing the Registry is a perilous task. A single mistake could ignite a firestorm of error messages, crashes, and failed startups. For this reason, we cannot recommend this course of action unless you feel comfortable with the changes you intend to make.

A better option is to take advantage of a system customization utility (or a suite of such utilities). Customization utilities come in a couple of different flavors. On the one hand, you have the "tweak" products, which are designed to help you fine-tune the PC's existing settings for optimal performance and convenience. The marquee utility in this category, at least for WinXP users, is Microsoft's Tweak UI PowerToy (free; <http://www.microsoft.com/windowsxp/downloads/powertoys/xppowertoys.msp>). Tweak UI provides access to advanced customizations that would otherwise require hands-on Registry editing. Other titles include TweakNow PowerPack Standard (\$24.95; <http://www.tweaknow.com>), TuneUp Utilities (\$39.99; <http://www.tune-up.com>), Ashampoo PowerUp (\$19.99 for Deluxe version for Win98 and WinMe; \$39.99

for XP version for WinXP; <http://www.ashampoo.com>), Mahaon soft's System Cop (\$19.95; <http://mahaonsoft.com>), and WinGuides' Tweak Manager (\$29.95; <http://www.winguides.com>). Like Tweak UI, these suites provide access to advanced customization options. The difference is that they also may help you clean the hard drive, accelerate your Internet connection, and maximize PC security, among other things.

The second group of customization utilities includes those that enhance the existing lineup of system capabilities by tacking on additional ones. Again, your first option if you use WinXP should be Microsoft's PowerToys. These free utilities, each of which is available as a separate download, include Alt-Tab Replacement, Image Resizer, and Virtual Desktop Manager. Users of other Windows versions should search a

shareware site, such as Tucows (<http://www.tucows.com>) or Download.com (<http://www.download.com>), for similar third-party products, such as MetaProducts' TrayIcon Pro (\$22; <http://www.metaproducts.com>).

For the widest range of superficial customization options, consider a Desktop customization suite, such as Stardock's Object Desktop (\$49.95; <http://www.stardock.com>) or Lighttek Software's Talisman Desktop (\$25; <http://www.lighttek.com>). These suites provide a variety of tools for creating unique wallpapers, icons, pointers, and other on-screen elements.

### Recovery Remedies

Anytime you decide to get involved with a system's core components and settings, you run the risk of creating

bigger problems than those you started with. That's why we recommend familiarizing yourself with various options for system recovery.

System recovery utilities are designed to restore a troubled PC to its condition before the problem(s) started. They accomplish this goal by maintaining an ongoing log of system changes and settings so that, when necessary, they can reverse changes and restore settings. A restore utility can remove recently installed apps, reverse changes made to system files and the Registry, undo Desktop modifications, and even roll back product and driver (a program that helps a hardware component communicate with the rest of the system) updates. Data files remain untouched.

WinXP and WinMe both include a restore utility called System Restore. To access it, open the Start menu and click

## Startup & Shutdown Issues

**T**he most daring part of the day for many people is the moment when they boot their computers. For others, it's the moment when they turn their computers off. Like roulette players, these users realize they could hit the jackpot of a smooth startup or shutdown just as easily as they could strike out with an error message, lockup, or crash. You can minimize the frequency of such problems, however, by taking proactive steps to better system maintenance.

**Problem:** My computer boots slowly.

**Solution:** It's easy to take a fast startup for granted. Most of the time, the boot routine involves little more than pressing a button and waiting a few seconds for Windows to launch. But you might be surprised at everything that

happens during that short wait. Among other things, the computer has to establish lines of communication with the hardware components, load dozens of programs, and check everything to make sure it's working properly. The length of the process obviously depends on the amount of hardware and software that are part of the PC.

If you find your PC starting slowly, it most likely signifies one of three things: The system is trying to load a large number of programs during the boot routine; the hard drive is disorganized and needs to be defragmented for more efficient retrieval; or the **Registry** (in Windows, a database of system settings and user preferences) is bloated with outdated references, commands, and settings. Whatever the case, you

should uninstall any programs you no longer need and perform a complete drive maintenance routine. Odds are good the system will start faster after that.

**Problem:** My PC hangs during the shutdown routine.

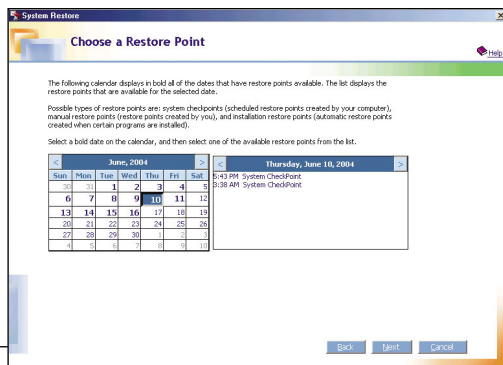
**Solution:** Shutting down a PC is like leaving home for a vacation. In both cases, you should take out the trash and put things in order so that you don't return to a disgusting mess.

Under normal circumstances, your computer has no trouble cleaning up after itself. It simply closes the open files and programs, flushes out the memory, checks in with its hardware components, and handles other end-of-the-day tasks. But if the system has trouble with any of these tasks, it will most likely freeze in its tracks. When this

happens, you should manually reboot the PC and then perform some basic system maintenance chores.

Start by cleaning the hard drive. Temporary files, residue from uninstalled applications, and other digital debris can interfere with the OS' (operating system's) ability to do its shutdown duties. You also should update the drivers to ensure that the shutdown dilemma is not the result of hardware communication issues. While you're at it, check with the Windows Update site (<http://windowsupdate.microsoft.com>) to get the most recent updates for your Windows version. Finally, you should restore your PC to a previous working configuration if your shutdown problems coincide with a recent change to your system's settings. ■

Restoring a prior working configuration is as easy as opening System Restore in Windows Me or Windows XP and choosing a date on a calendar.



All Programs (Programs in WinMe), Accessories, and System Tools. After you launch System Restore, you have the option of creating a new **restore point** (a record of system settings at a particular moment in time) or returning the PC to an earlier restore point. You also may have the option of undoing a previous restoration. Follow the instructions presented on-screen to complete any of the three processes.

Win98 users should consider investing in a third-party backup and restore utility, such as Symantec's Norton GoBack (\$39.95; <http://www.symantec.com>) or FarStone Technology's SecurePC (\$39.99; <http://www.farstone.com>), that can help recover systems from crashes and other emergencies.

You also should include a backup utility as part of your system recovery plan. Windows includes one, referred to as Ntbackup in WinXP, Msbackup in Win98 and WinMe, or just plain Backup. Backup isn't installed by default; you must install it manually from the Windows installation CD-ROM. Insert the CD-ROM in your optical drive, open My Computer, right-click the optical drive's icon, and select Open. Locate the VALUEADD\MSFT\NT-BACKUP folder (in WinXP) or the ADD-ONS\MSBACKUP folder (in WinMe) in the resulting window and double-click the Ntbackup file (in WinXP) or Msbexp file (in WinMe). Follow the on-screen instructions to complete the installation. To install the utility in Win98, open the Control Panel and click Add/Remove Programs. On the Windows Setup tab, highlight the Disk Tools (or System Tools)

option and click Details. In the next dialog box, select the Backup option and click OK. Then, click OK again and wait while Win98 installs the utility. The OS may prompt you to insert the Win98 installation CD-ROM.

The built-in utilities provide adequate backup functionality, but users with extensive archiving needs will have to find a more robust product. Among the available options are StompSoft's BackUp MyPC (\$69; <http://www.stompsoft.com>), Paragon Drive Backup (\$49.95; <http://www.drive-backup.com>), Acronis True Image (\$49.99; <http://www.acronis.com>), and RD Technologies' Backup

2004 Pro (\$65; <http://www.backup2004.com>). Make sure you include your product choice as part of a system maintenance routine.

## Stick To A Schedule

Of course, the success of any maintenance routine depends on how often you use it. We recommend performing most maintenance tasks, including drive and memory scans, on a weekly basis. Perform backups more often, preferably daily. You also should regularly review your system's potential for customization. Your computing habits and behaviors are bound to evolve over time, and you don't want to miss out on any tweaks that could make your system better and life easier. ■

BY JEFF DODD

## Driver Troubles

**W**hat's the difference between a pile of hardware components and a functioning computer system? Drivers. These miniature programs facilitate communication between a particular device and Windows (and thus, with the rest of your system, as well).

A driver is installed every time you connect a piece of hardware to your PC. As your system evolves, however, the driver may encounter something it doesn't recognize. Maybe it's a new printer or a storage drive. Maybe it's a new office suite or video-editing application. Whatever it is, the driver is likely to react

by displaying an error message and/or crashing the PC. When that happens, you need to update the driver.

Unfortunately, even the most experienced users have difficulty determining if a driver or something else is the cause of a problem. That's why it's important to update the drivers as part of your system maintenance routine. You can update the drivers manually by visiting the Web sites of various hardware manufacturers and downloading any driver updates they have available. Or you could make things easy on yourself by purchasing a utility such as RubyMicro Software's DriverMagic (\$25.50;

<http://www.rubymicro.com>) or Driver-Soft .com's Driver Genius (\$25.95; <http://www.driver-soft.com>) that will update your drivers automatically. These utilities also provide support for backing up and restoring drivers.

Be wary of other third-party driver utilities you see. Programs such as GoldSolution Software's Driver Magician (\$29.95; <http://www.drivermagician.com>) and Drivers HeadQuarters' Driver Detective (\$29.95; <http://www.drivershq.com>) are available for about the same price but do not support all three—update, backup, and restoration—functions. ■





P C P r o j e c t :

# Ward Off The Warmth

**Cool Your System With A Better Heatsink**

**Y**ou can all but see the heat waves coming out of your PC's case. The problem is the PC's standard-issue CPU heatsink.

Its job is to draw heat away from the blistering-hot processor—and it does that job, but not very efficiently. By replacing it with an aftermarket heatsink, you can transform your PC into a cool oasis.

The primary benefit of replacing your PC's stock heatsink is improved cooling. You don't have to choose one or the other: Many aftermarket heatsinks provide cooler operation than manufacturer-supplied standard CPU coolers.

In order to choose a heatsink that is compatible with your hardware, you'll need to know the model of motherboard and type of processor in your PC. For the example here, we used the Nexus AXP-3200 (\$32.95), a heatsink and fan for AMD Socket 462 systems, available from EndPCNoise.com (<http://endpcnoise.com>). Many heatsinks come with fans attached, and while it's not absolutely necessary to replace the fan when you replace the

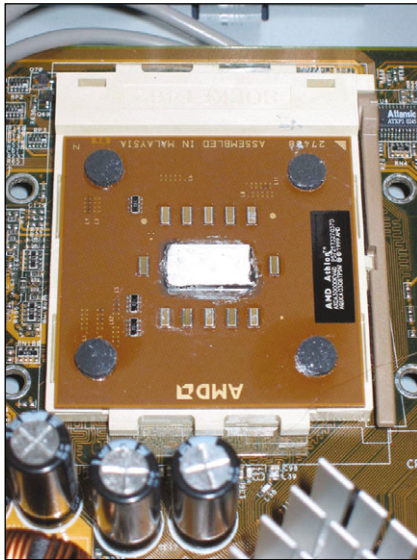
heatsink, it'll make your PC run that much cooler and quieter.

A heatsink rests directly on the CPU (separated only by a thin later of thermal paste, which we'll get to in a moment). As the CPU works, the heat it generates is transferred to the heatsink. A fan atop the heatsink draws the heat through and blows it away. A heatsink that uses better conducting materials can pull more heat away from the processor. An all-copper heatsink will do a better job of dissipating heat than an aluminum one, for example. However, copper is heavier than aluminum. A heatsink that's too heavy could damage the CPU if the computer is jostled or moved without care. Again, choose a heatsink that is compatible with your CPU.

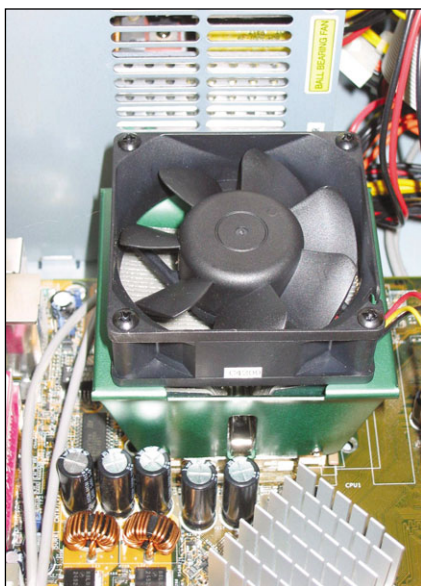
Equally important is the fan, which is screwed to the heatsink. Aftermarket cooling setups often utilize fans with larger blades, allowing them to move more air with less noise. Some models

The primary  
benefit of  
replacing your  
PC's stock heatsink  
is improved  
cooling.





Here, we've applied a fresh coat of thermal paste to the CPU.



A new heatsink and fan installed on a cool CPU.

include a knob that lets you control the speed of the fan, from ultra quiet (that run hotter) to less quiet (but cooler). Keep in mind that even though replacing your heatsink can do your PC a world of good, it will likely void your warranty.

### The Fine Print

Now that you have the basics down, let's get started.

**Unplug the fan.** The first step is to open the PC case to reveal the heatsink and fan. (Be sure to ground yourself by touching a metal surface or wearing an antistatic wristband before touching the inside of the case.) You'll notice two thin wires that run from the fan to a plug on the motherboard. Unplug

the fan from the motherboard by gently pulling on the connector.

**Remove the old heatsink and fan.** The next step is to remove the heatsink and fan. The procedure will differ depending on your particular heatsink, so take a moment to deduce how to remove yours. On Pentium 4 systems, screws or a plastic clamp may hold the heatsink in place. On AMD models, a latch secures the heatsink to the CPU. Use a flathead screwdriver to press gently down and outward until the latch releases. This can be the trickiest part—too much pressure can damage the CPU, or a slipped screwdriver could damage the motherboard.

No matter how the heatsink is secured, it and the fan should come apart from the CPU as one unit. You may notice screws on top of the fan that secure it to the heatsink: There should be no need to unscrew them.

Once the heatsink and fan are unfastened, gently pull it from the CPU. A layer of sticky thermal compound may still adhere them. If so, use a flathead screwdriver to gently pry them apart.

**Clean the processor.** The tricky part is done. With the heatsink removed, you'll find some thermal paste stuck on the CPU. To remove the paste, gently scrape the processor with a butter knife or other flat tool. Don't gouge the processor—you don't want to give it a lobotomy. Apply a few drops of rubbing alcohol to a lint-free cloth to remove any gooey smudges that remain.

**Apply fresh thermal paste.** Your new heatsink should include thermal paste in a small tube or bag. The paste provides a buffer between the CPU and heatsink that helps heat transfer. Apply some of the paste to the CPU. Put a small amount of paste on the CPU (you probably won't need all of it) and spread it across the surface with a flat-edged surface: a credit card or toothpick works well. You want a thin, even coating across the CPU, like icing on a cake.

Some heatsinks have preapplied thermal paste; in this case, skip this step.

**Install the new heatsink.** Install the new heatsink on the CPU. Be sure to mount the new heatsink in the same orientation as the old, for instance, with the latch on the same side. Use a flathead screwdriver to work the latch.

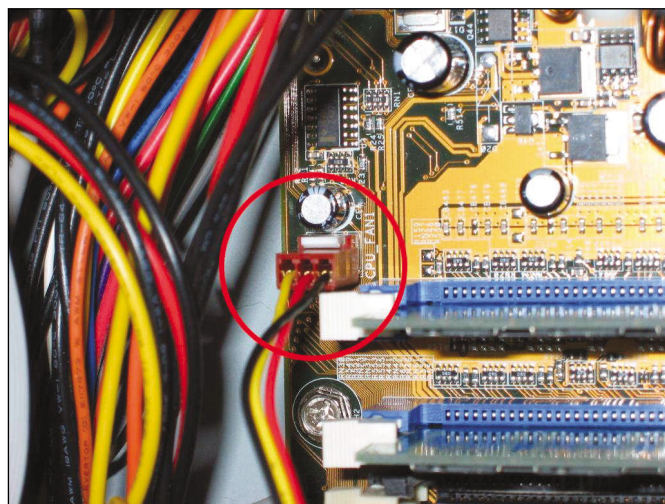
Plug the new fan into the power socket on the motherboard. Close the computer, plug it in, and turn it on. Installation is complete.

### It Works

That's it—your CPU is running cooler and quieter than ever before. On the system we upgraded in this article, the effect was unmistakable. Our CPU, working at maximum load for 10 minutes, ran at about 123 degrees Fahrenheit using the stock heatsink. Under the same workload with the aftermarket heatsink, the CPU temperature dropped about 12 degrees. The PC is noticeably quieter, too, thanks to the new fan attached to the heatsink.

The whole process should cost \$30 to \$50 for a replacement heatsink and take about 15 minutes from start to finish. That's a small investment to turn your PC into a cool and quiet oasis. ■

BY KEVIN SAVETZ



This tiny connector provides power to the CPU fan. Don't forget to reconnect the replacement fan once the new heatsink is installed.



# WordPerfect 10

## Print Basics

Office Suites

Beginner

2002 for  
Win9x/2000/  
Me/XP

Word processing programs are mostly about input: to-do lists, letters, and so on. But all that input may be for naught if you can't generate output in the form of a printed document.

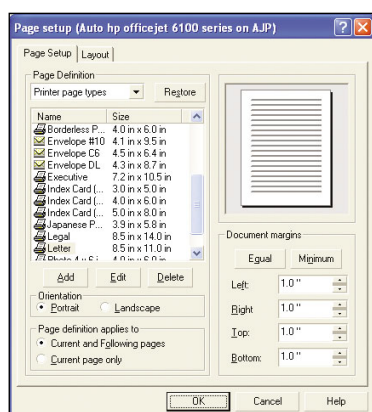
### Select Printer

Many home users only have one printer hooked up to their computer; at work, however, there may be several networked printers to choose from. For those with options, the first step in printing is selecting the proper printer.

Go to File and then Print to display the Print dialog box. The choices vary depending on the printer selected. In the Destination section of the Main tab, WordPerfect shows the default printer in the Name box. If you have more than one printer available, click the down arrow to reveal all installed printers. Click the one you want to use and then click Close to return to the open document.

Another path to the Print dialog box is the printer icon at the bottom of the WordPerfect window. Hover your pointer over the icon to see which printer is selected. If you need

another device, click it to open the dialog box.



Page Setup offers multiple options for optimum printing.

### Print Preview

WordPerfect, like other word processing apps, lets you preview a document's printed view without putting ink to paper. Documents, regardless of the word processing program, can print differently than they appear on your computer screen, depending on the selected printer. This is why it's so important to select the printer first.

By previewing the print version, you can catch errors or tweak the layout to maximize effect. For example, you can check for balance in the layout, incorrect margins or indents, page breaks, or pesky **widows** and **orphans**—single lines from paragraphs trapped alone at the top or bottom of a page, respectively. You can correct these and other problems in the Print Preview mode.

To view a preview of your document, click File and then Print Preview. WordPerfect zooms out to show the full-page view of the document; it also reveals the Print Preview toolbar.

The specialty toolbar can help you perform several tasks. Rest the pointer on each icon to display its name and a brief explanation of what it does. Among the most helpful: Two Page view, which showcases two pages side-by-side; Zoom, which lets you come in closer; and Page Setup, which opens its own dialog box filled with handy features.

### Page Setup

Page Setup is an essential feature, whether you access it from Print Preview or the File menu. Through the Page Setup dialog box, you can adjust most printing options.

The dialog box has two tabs, Page Setup and Layout. On the Page Setup tab, select the desired Page Definition, which defines the page size for the type of output. The definition's default margins appear in the Document Margins section, but you can also adjust these. Click the Minimum button to set margins to the smallest size your printer accepts. To set equal margins on all four sides of a page, enter the first value in the Left box and click the Equal button. If neither option meets your needs, enter the appropriate values for each side.

The Layout tab offers Two-Sided Printing, Binding, Two-Sided Binding, and Divide Page. Some features may be unavailable when others are selected and therefore appear shadowed. Under Two-Sided Printing, choose Book or Tablet style. These choices let you set margins that leave room for binding and printing two-sided pages without manually adjusting the layout. WordPerfect keeps track of which pages are left, right, top, or bottom pages and treats them accordingly.

### Print Pieces

When you're ready to print, go through Print Preview or the main window. Click the Printer icon on the toolbar to open the Print dialog box. Although WordPerfect's default is to print the full document, you can direct it to print specified pages instead. Choose Current Page to print the page where the cursor resides or click Pages and type the pages you need. You can specify individual pages, as well as a range, such as 2, 5-6.

There are more options to explore, but these features should get you started. ■

BY ANNE STEYER PHELPS



# Paint Shop Pro 8

## Using Effects

Image Processing

Beginner

8 for

Win98SE/NT

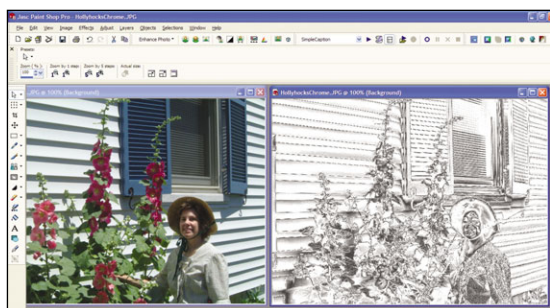
4.0/2000/Me/XP

**R**eady to have a little fun? Paint Shop Pro includes a wide array of effects that can jazz up a photograph, create a romantic feel, or otherwise enhance an image. We can't cover all the effects in one column—there are dozens of them—but we can introduce you to a few of our favorites.

### The Romantic Effect

If you ever wanted a glamour shot, now's your chance. Paint Shop Pro's Soft Focus effect softens the look of a photograph. To apply a blur to an entire photograph, go to the Adjust menu, choose Softness, and select Soften. For more softening, choose Soften More. Fine-tune the softening by

selecting Adjust, Softness, and Soft Focus. Experiment with various values within the Soft Focus dialog box. Once you have the desired effect, visible in the Preview box, click OK.



Chrome is one of the many artistic effects available in Paint Shop Pro.

### Artistic Effects

Glowing edges, colored foil, and sepia tones are just some of the artistic effects you can apply to photographs. All are located within the same menu area; go to the Effects menu, select Artistic Effects, and choose, say, Chrome to create a photo that looks as if it were made by someone hammering tin. Or choose Neon Glow to add bright pinks, greens, and yellows.

Most of the effects come with dialog boxes that let you adjust the effects' properties; view these properties in a preview window and click OK before the effect takes place.

### 3D Effects

Web designers, take note. You don't need to rely on your HTML (Hypertext Markup Language)-authoring software to create buttons for your Web page. Paint Shop Pro includes half a dozen 3D effects: Buttonize, Chisel, Cutout, Drop Shadow, Inner Bevel, and Outer Bevel. Let's create a button from a logo for a golf course. Open the logo, go to the Effects menu, and

choose 3D Effects and Buttonize. Leave the default values (although later we may wish to change the Height, Width, Opacity, and Edge properties), click OK, and save the new image.

### Distortion Effects

Sometimes you don't need a reason to play with effects; you simply do so because you're curious about them. That's how we felt when we discovered the distortion effects. Sure, there may be a practical purpose in seeing what a picture would look like if you hauled off and punched the subject, but for the most part, the distortion effects are primarily good for a belly laugh.

For instance, go to the Effects menu, choose Distortion Effects, and choose Ripple. Leave the default values in the dialog box and click OK. You can also apply this effect to a portion of photograph by selecting an area of an image and then choosing the effect. Other fun effects include Curlicues, Pixelate, Spiky Halo, Wave, and more.

### Multiple Effects

So far, we've looked at viewing and adding effects one at a time. But what if you want to try out multiple effects before adding effects to an image? That's where the Effect Browser comes in handy. It allows you to preview the entire range of effects in one command.

Open the browser via the Effects menu's first command, Effect Browser. The Effect Browser consists of two main panels. The left panel contains a list of all the possible effects, such as the Soften effects found under Adjust or the Artistic effects found under Effects. The open photo is displayed as a series of thumbnails with various effects applied to them, and by default, the first effect (Add Noise) is applied to the photo.

To choose your own effects, peruse the various menus in the left panel and click one of the folders and subfolders. The thumbnails will appear in the right panel with the chosen effect. If you approve, click Apply or click Modify to edit the effect's settings. If you don't like what you see, try a different effect. And once you've come up with the perfect effect or set of effects, be sure to save your masterpiece. ■

BY HEIDI V. ANDERSON

# Quicken 2004 Premier

## Invitation To The Investing Center .....

Personal Finance

Intermediate

2004 for Win9x/  
2000/Me/XP

Quicken 2004 Premier's Investing Center provides access to the information you need to track your investments. Whether you're looking for account balances, equity news, or investment advice, the Investing Center can help.

### Navigate Investing Center

To open Quicken's Investing Center, click the Investing menu and Go To Investing Center. At the top of the Investing Center area, you'll see four tabs that give you access to investing information.

**Today's Data.** While this tab might be a little misleading—the information is only current to today if you've told Quicken to download data today—it does show the latest alerts about the

### Put Investing Center To Work

Click the One Step Update button to make sure the data you've downloaded into Quicken is as current and accurate as possible. Before using Investing Center, enter new transactions and make sure account balances and share holdings are accurate.

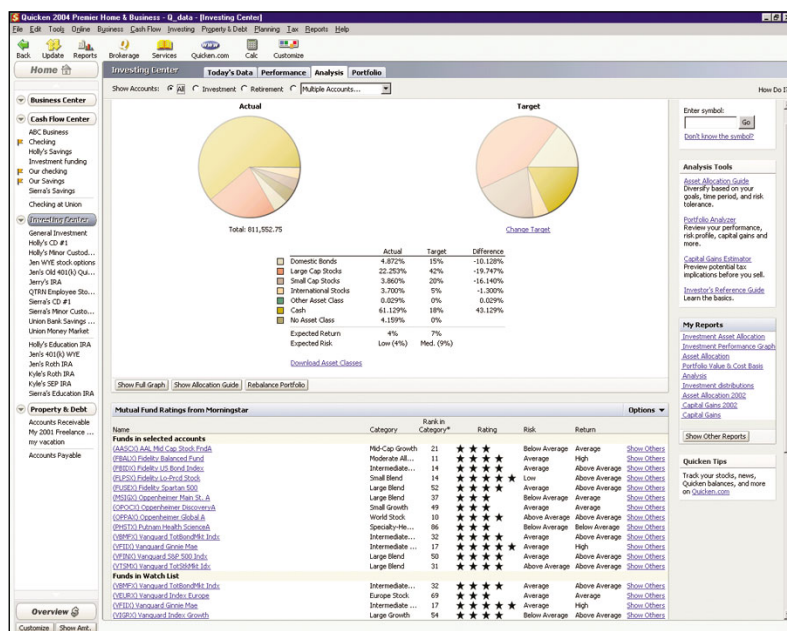
You're then ready to use the Investing Center to perform some important analysis on your portfolio.

**Asset allocation.** Most experts say making use of the proper asset allocation is vital to a successful investment strategy. Click the Analysis tab, and Quicken will display pie graphs with your current asset allocation, as well as your target asset allocation along the top of the window. (Click the Change Target text link to edit your target asset allocation.) For more information on setting the proper asset allocation to meet your investment goals, click the Asset Allocation Guide link along the right side of the window.

**Security allocation.** Near the bottom of the window for the Analysis tab, you'll find the security allocation graph, which shows how weighted each security is within your portfolio. This is important because it may reveal that you own a large percentage of one stock or mutual fund because it appears in several of your investment accounts. Experts typically frown upon holding a large percentage of your portfolio in a single stock because of the risk it carries to your portfolio. Conversely, you might not have a mutual fund weighted as heavily in your portfolio as you might like.

**Performance analysis.** Investment analysts say your overall portfolio should be able to at least match the performance of key market indexes, such as the S&P 500. Make this comparison by clicking the Performance tab. Along the top of the window, a line graph shows how your portfolio would look if you invested \$10,000 one year ago and matched your portfolio's returns. Now click the Enable Market Indexes button to have Quicken download the index data it needs. Place a check mark next to the indexes for which you'd like to see a comparison line graph. Click the Options button to change the date range for the graph.

If your portfolio is significantly lagging the key indexes, ask your broker a few questions about your portfolio's recent performance. If you are your own broker, you may want to rethink your investment strategies. ■



The Analysis tab in the Investing Center provides key information about your portfolio, such as an asset allocation graph.

stocks and mutual funds you own. You'll see performance data for your accounts. Click the One Step Update button in the upper right to have Quicken download the latest data.

**Performance.** See how each account is performing over a one-, three-, and five-year basis.

**Analysis.** This tab is especially handy, giving you key asset allocation statistics and mutual fund analysis from Morningstar, a financial analysis company. (We'll discuss the features under the Analysis tab in greater detail later.)

**Portfolio.** Click the Portfolio tab to see your overall financial picture, including account balances and number of shares owned.

BY KYLE SCHURMAN





# Lighten Up.

It wasn't so long ago that if you wanted to bring your data with you, your hardware had to come too. Well, that's all in the past now thanks to the new SanDisk Cruzer™ Mini. At under half an ounce, the Cruzer Mini goes anywhere, and with up to 256MB of flash memory, it takes a lot with it. Hi-speed USB 2.0 compliant, SanDisk's Cruzer Mini lets you transfer data faster than ever before. And at less than 8mm thick, all it needs is a single USB slot. Just drag, drop, and go. It's all about convenience – no extra hardware, no worries.

So whether you're installing utilities or updating print drivers for the umpteenth time, you can take your files with you wherever you go – and you won't even need your dolly.



For more information on SanDisk Cruzer Mini, visit [www.sandisk.com/smart](http://www.sandisk.com/smart)



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# Microsoft PowerPoint 2002

## Headers & Footers .....

### Presentation

### Intermediate

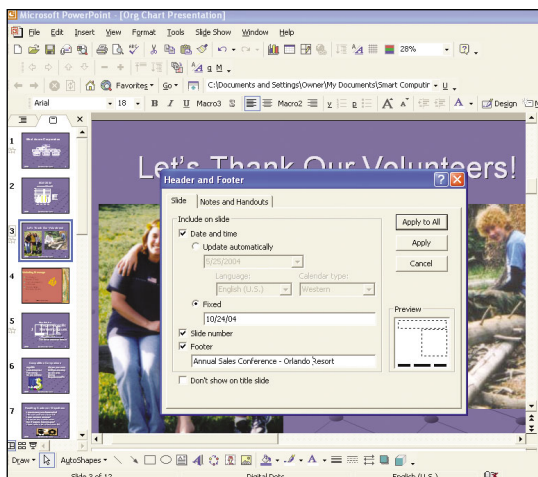
2002 for  
Win9x/NT  
4.0/2000/Me/XP

A couple of recent PowerPoint Quick Studies touched on the topic of headers and footers, those tidy little dates, times, and other house-keeping information that slick presenters discreetly tuck into their slides. As basic as these items seem, they can quickly become confusing for users trying to keep straight the various headers and footers applied to slides, handouts, and notes pages. It's easy to forget, for example, that altering the font of your company motto in the footer of your slides doesn't affect the footers in the handouts. So take a few moments to get your bearings with this one-stop guide to headers and footers.

### Entering Information

You can add footers to all slides in a presentation or only to selected slides. (Headers aren't allowed on slides, but they are on notes and handouts pages.)

If you want a footer only on selected slides, select the slides you want to apply it to by clicking them in the pane on the left side of the screen (Slides view). Hold down the CTRL key as you click multiple slides to select them all, or hold down the SHIFT key and click the slides at the top and bottom of



Using footers, you can quickly add a date, page numbers, and text to the bottom of selected slides.

the group you want to select. By selecting various groups of slides, you can use different footers for different parts of the presentation.

To add headers and footers to any part of a presentation, click the View menu and select Header And Footer. You'll see tabs for Slide and Notes And Handouts. If you tell it to, PowerPoint will handle the details of adding the date and time and slide number. Under Date And Time, you can tell PowerPoint to include the current date and time (handy for making sure you have current information on the slides at all times) or a fixed date and time you enter (handy when you're printing slides in advance of an upcoming presentation and want that date on the slides). If you choose the current

date and time, use the drop-down menu to select the format for the date and whether it will include details such as the day of the week and time of day.

You can head off some frustration now by remembering this fact: If you choose to hide a slide (prevent it from appearing in Slide Show view by clicking Slide Show and Hide Slide), PowerPoint still counts it when numbering slides. That means your visible slides will be numbered something such as 1,2,4,5. Avoid this problem by moving the hidden slide to the end of the presentation.

To add a footer, type text into the appropriate box in the dialog box. Try to restrain yourself—PowerPoint lets you type in a lot more text than is wise for a footer. Click Apply. To add the information to the entire presentation, click Apply To All.

The options on the Notes And Handouts tab are the same with two exceptions. This tab includes a place to enter Header text, and it lacks the Slide tab's option for excluding the title slide from any settings you just made.

If you decide to get rid of any of your newly added information, reopen the dialog box and uncheck the appropriate boxes. Click Apply or Apply To All.

### Changing The Look

Last month's Quick Study explained that it's possible to have multiple design templates within a presentation and that you must edit different Slide Masters to alter the look of slides built around each template. When it comes to the Header And Footer dialog box, you don't need to worry about different design templates. Clicking Apply To All really does put the information on all the slides.

Formatting information for headers and footers is stored not on individual slides or notes and handout pages, but on the masters for those items. If you decide you'd like a footer's font to be larger or bolder or want the footer or page number to be in a different position on the slide, follow the instructions in last month's article to edit that information on the master.

What if you want an image to appear at the bottom of each slide? That's not a footer but a part of the slide's design template, so you'll need to head back to the Slide Master to do that formatting. ■

BY TREVOR MEERS

# Microsoft Excel 2002

## Microsoft's Online Extras .....

### Spreadsheet

#### Advanced

2002 for  
Win9x/NT  
4.0/2000/XP

If you haven't spent much time on Microsoft's Office Web site (<http://www.microsoftoffice.com>), you may be surprised at how many templates, sample data collections, performance boosters, and add-ins you can download to let Excel do things it never could right out of the box.

There are multiple ways of getting at Microsoft's Excel downloads, but start with the Office Update on the Office home page. This tool lets Microsoft scan your PC's Office installation and report which updates you need. This feature relieves you of figuring out what updates you need, and while you may not like Microsoft looking around your hard drive, keep in mind a lot less savory parties are probably snooping around, as well.

Once you've updated Office, look for more extras by clicking Downloads on the left side of the screen. Type **excel** in the search box at the top of the next screen and press **ENTER**.

(Make sure you have current antivirus software before you download files.)

You'll see a list of downloadable files, including add-ons for expanding Excel Help files and example spreadsheets filled with data to help you understand complex topics. You'll also find small add-in programs that expand Excel's functionality. Downloading and installing many of them adds a new command to Excel menus. For a quick look at how one of the add-ins works, see the March 2004 Excel Quick Study, which walks through downloading and using the Report Manager.

When a listing catches your interest, click its title to get a description of the file, its size, when it was published, and more. Scroll down the page to read instructions for installing each download. You also should see information on how to uninstall the download if you don't like it (although many downloads have no uninstall feature). Sometimes you'll just get instructions on reverting to original settings.

If you came to the Office site looking for that template someone suggested downloading to help create your next balance sheet, you won't

find it in this list. Although most of us would consider templates and media clips to be downloads, these items are listed in a separate category on the left side of Office Web pages.

### The Download Center

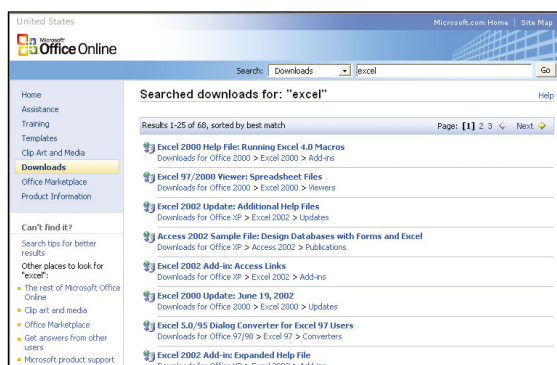
Another path to the Microsoft storehouse is through the Download Center (<http://www.microsoft.com/downloads>). Going this route gives you the potentially insightful feature of listing the most popular downloads for the program you're interested in. As we were writing this article, for example, the chart-topper was a viewer that lets you access spreadsheets from various Excel versions.

To see a full list of downloads, choose Excel on the drop-down menu at the bottom of the screen and click Go. This search provides a broader list than the one you get when searching for Excel downloads via the Microsoft Office home page. The Download Center's list produces several updates for Office, rather than just the Excel-specific files you'll see when you visit the Office page.

### The Marketplace

The left side of the Excel home page includes a link to the Office Marketplace, which you can reach directly at <http://www.microsoftoffice.com/marketplace>. Look for Excel add-ons—some free; most available for a charge—other companies offer. In the search box, type **excel**. You'll get a list with links to companies offering tools for improving how you handle charts and lists, create forms, transfer files among different Office versions, and more. Each entry provides a summary to help you decide whether to go read more about the program. Downloads carry star ratings the consumers who have tried them provide.

Browse through the list, and you're sure to see something intriguing. One that caught our eye, for example, was The Spherosoft Highlighter, a \$49 download that automatically highlights cells when their values change. Many of the programs listed here are not specific to Excel, but rather Office or even general Windows productivity tools. But if they're listed here, they should work with Excel, so browse until you find the goodies that compel you to reach for that Download button. ■



If you like to accessorize, you'll love all the goodies you can download from Microsoft's Web sites to expand Excel's capabilities.

BY TREVOR MEERS

# Online

## Control Your PC From Afar With RealVNC



Online  
Advanced

**B**uilders of home networks or even small-business networks would agree: Sometimes it would be handy to be able to control all of your computers from one central point.

A variety of software developers offer various solutions; for example, Windows XP Professional includes a built-in Remote Desktop Connection feature that lets you log in to other Windows PCs. For many jobs, though, we like the small, simple, and free RealVNC.

### Bridge The Gap

RealVNC has long been a hit with the open-source community and shows up in a lot of Linux distributions. Windows users need not feel left out, as the program runs on a variety of platforms. With RealVNC, you can open a window that displays a remote desktop exactly as it appears on that machine. What's more, you can control the other computer as if you were sitting in front of it, even if you are actually across the network or across the Internet. A Windows PC user can view a Linux desktop and vice versa. The flexibility and the lack of a price tag make this popular application worth a try.

Browse to <http://www.realvnc.com> and click Download It Now. The full package installs both the Viewer, which you use to control other machines, and the Server, which allows others to control your machine. Neither component takes up much hard drive space. In fact, you can fit the Viewer on a floppy diskette and load it anywhere you go.

During the install process, you can choose whether to register RealVNC as a service in Windows NT/XP. If you don't plan on running a VNC server at most times, you probably want to disable that feature so RealVNC doesn't automatically start when you don't realize it.

After the installation, you'll find RealVNC in the Programs menu (go to Start and [All] Programs). Start the server in either Service or User mode. With the server running on the target machine, start the VNC Viewer on the controlling machine.

Viewer will run in Listening mode, which plants an icon in your System Tray, or as a standard program for a one-time connection. For now, choose Run VNC Viewer. To use the Viewer, you need to

input the IP (Internet Protocol) address of the target computer. If you don't know the address, open a Command Prompt screen (go to Start, Programs, Accessories, and Command Prompt) on the target machine and type **IPCONFIG**. Windows will return a list of basic networking info, including the present IP address.

Your ISP (Internet service provider) might assign different IP addresses at different times, so the one that worked before might not work now. Additionally, if the target computer resides on the opposite side of a firewall (including the firewalls built into most routers), you'll need to open a port or use a secure tunneling setup. Talk to your network administrator or check out the VNC FAQ (frequently asked questions) for pointers on how to start (<http://www.realvnc.com/faq.html>).

With your network configured and the IP address entered, click OK. After a short pause (depending on your network bandwidth), a new window appears to display the remote PC's desktop.

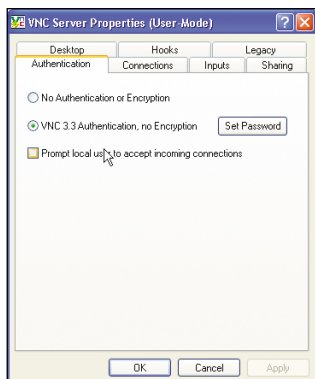
### VNC Options

Once you see how simply and easily RealVNC works, it might make you a bit nervous to have the VNC server running for just anyone to control. Even within your own network, RealVNC is a powerful tool that should be limited to authorized users. On the server machine, go to Start and Programs and, from the RealVNC menu, choose Configure User-Mode Settings (or Configure VNC Service if you are running in Service mode). On the Authentication tab, click the option to require authentication and type in a password.

Also on the Authentication tab, check the box next to Prompt Local User To Accept Incoming Connections to require that someone in front of the target machine must give her permission before a VNC session can begin. This works particularly well for remote troubleshooting applications. Additional security measures are on the Connections tab in the Properties dialog box. You can define particular IP addresses or address ranges that should be allowed or denied access.

The amount of security necessary depends upon your situation. Once configured, RealVNC can provide a real convenience from the comfort of your own desk chair. ■■

BY ALAN PHELPS



RealVNC lets you control one machine on your network from another PC. It also works across the Internet, but you'll want to use appropriate security measures.



# Quick Tips

## Secrets For Succeeding In Common Tasks

**Question:** My Internet keyboard is handy for launching common applications, but how do I change the keys to launch other applications if I want?

**Answer:** A new generation of keyboards (such as Microsoft's Internet Keyboard Pro) includes a suite of function keys that launch mail, Web, and media player applications without the hassle of searching your Start menu. However, you may want to launch applications other than the defaults your keyboard maker provided. Just access your keyboard properties. In Windows XP, simply click Start, Control Panel (make sure you're in Category View), Printers And

**Answer:** Replacement ink cartridges are expensive. The total cost of ink often far exceeds the cost of the printer itself. Rather than purchasing manufacturer's replacement cartridges, many printer users opt for refill kits as a less expensive alternative. Replacement ink is drawn into a small syringe and then slowly injected into the cartridge's spongy ink-retaining material through a fill hole. While this technique can save significant money over the life of a printer, you can only refill the cartridges themselves several times. Eventually, the old cartridge will quit. Plan to replace the ink cartridge with a factory-fresh unit every three to five refills. If the refilled

cartridge fails, you can always use the syringe to remove the added ink and return it to the supply bottle.

**Question:** Can you explain this thing called phishing? Why is it such a problem?

**Answer:** Phishing is an online scam that attempts to trick or threaten unsus-

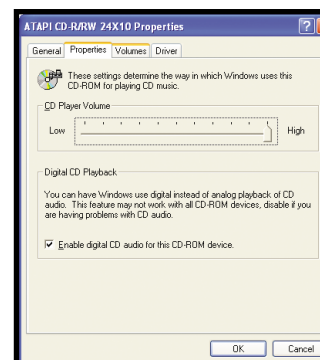
pecting users into sharing private information that miscreants later use for identity theft. The scam often starts with a mass email to millions of random email addresses, often in the guise of a major service or banking company. The message then tells readers to visit a Web site and complete a form or face some consequence (such as account cancellation). The Web site

itself is usually a very good replica of the site that the major service or banking company actually uses. Even though the vast majority of recipients ignore such scams, a response rate of just a few percent translates to thousands of potential victims. Never reveal personal information as the result of an email, and always contact your financial institution or service organization for more details before responding to any online request for information. Report any such scams to your local attorney general's office.

**Question:** How can I play music CDs without a CD audio cable to the sound card?

**Answer:** Most CD/DVD drives produce an analog sound output that is wired to a corresponding CD audio input at your sound card.

The analog signal is amplified and mixed with other signals (such as WAV files), and you hear the analog music played through your speakers. If the small, 4-wire CD audio cable was missing or damaged, you could not play CD audio. For example, a system with a CD and DVD drive might only play CD audio through the CD drive because that's the device cabled to the sound card. However, many of today's optical drives support digital audio playback, thereby eliminating the need for an audio cable. Right-click My Computer, click Properties, click the Hardware tab, and click the Device Manager button. Right-click the optical drive, select Properties, and

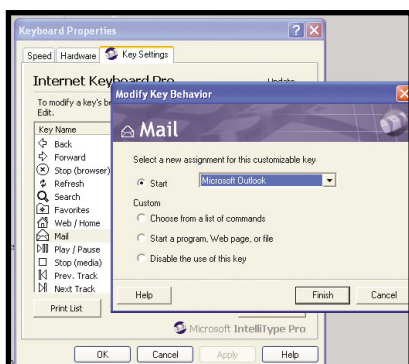


**Enable digital audio playback to eliminate the need for analog audio cabling between the optical drive and your sound card.**

then click the Properties tab. In the Digital CD Playback area, make sure that the Enable Digital CD Audio For This CD-ROM Device box is checked. Click OK.

**Question:** Should I make a backup copy of my BIOS (Basic Input/Output System) when performing an update?

**Answer:** BIOS upgrades are sometimes needed to overcome firmware bugs or unexpected hardware incompatibilities between the motherboard and other devices. Although the upgrade process is intended to be as smooth and straightforward as possible, there is a small possibility of trouble (such as system crashes or power failures) that may render the PC unbootable. Most BIOS flash utilities will offer the option to save a copy of the current BIOS as a diskette file, which you can restore in the event of an upgrade failure. Always make a backup of your current BIOS file to diskette. If trouble strikes, you can use



**Use the Key Settings tab to tweak your Internet keyboard configuration.**

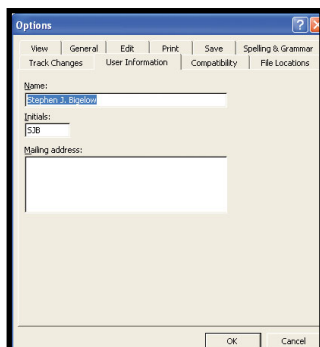
Other Hardware, and Keyboard, and select the Key Settings tab. Want to use Eudora instead of Outlook? No problem. Highlight the Mail key and click Edit. Opt to start a new application listed in the drop-down menu or customize the key to a different application.

**Question:** How many times can I refill an ink cartridge?

the backup file to restore the original BIOS and regain control of your PC.

**Question:** *Can documents reveal your name and address? If so, how do I prevent this?*

**Answer:** Word processors, such as Word 2000, may be revealing your identity and address without your knowledge. With Word running, just click Tools and Options and select the User Information tab. This tab reveals the name, initials, and mailing address of the document's creator and can be a serious threat to your personal privacy if the document is meant for wide distribution



**Make sure to erase any personal information on the User Information tab.**

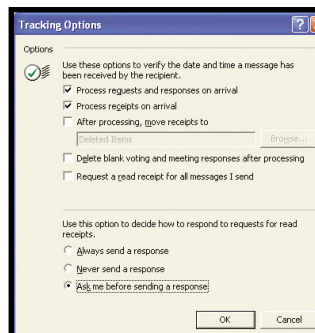
(such as Internet downloads); it's like plastering your name and address on a billboard. If you intend to distribute your document to a large group of people, be sure to clear out the User Information tab.

**Question:** *Should I compress files before I upload them to email or FTP (File Transfer Protocol)? How should I do this?*

**Answer:** Data takes time to upload to the Internet, and large photos or documents can seem to plod along forever. You can speed your uploads along by compressing the files first. In WinXP, simply open the folder and highlight the file you want to compress. If you want to compress more than one file, just hold down the CTRL key while selecting files. Now right-click the selected file you want to start compressing. Click Send To and Compressed (Zipped) Folder. All of the selected files will be compressed into a single ZIP file in your current folder using the name of the file you right-clicked. For example, if you selected 10 photos to compress and right-clicked the file Photo1 to start the Send To process, the ZIP file would be named Photo1.ZIP. Now use the ZIP file as an attachment to your email or FTP transfer. The process will go a lot faster, and the person downloading your compressed files will thank you.

**Question:** *Should I stop my Outlook from automatically responding to spam?*

**Answer:** As a general rule, never respond to spam. Although most spam messages purport to offer an unsubscribe email address, responders are often just confirming their email address to the spammer, which usually precipitates more spam. The problem is that you may be responding to the spam without even knowing it. Click Tools and Options, click the E-mail Options button on



**Be sure to disable automatic email responses in Outlook.**

the Preferences tab, and click the Tracking Options button. Make sure that the Always Send A Response button is not checked (select Never or Ask Me instead). Otherwise, Outlook may automatically respond to unwanted spam, making you a prime candidate for even more junk mail.

**Question:** *How do I set up my printer so that my kids can use it from their system?*

**Answer:** You can easily share your local printer with other PCs on your home network. In WinXP, click Start, Control Panel (make sure you're in Category View), Printers And Other Hardware, and Printers And Faxes; highlight the desired printer; and click Share This Printer. Your printer's Properties dialog box will open with the Sharing tab selected. Click the Share This Printer radio button and enter a short but descriptive name for the printer. Apply your changes and click OK. Remember that each PC that will share the printer (including yours) must have File And Printer Sharing For Microsoft

Networks included with network properties. To check this, click Start, Control Panel, Network And Internet Connections, and Network Connections; highlight your LAN (local-area network) connection; and click Change Settings Of This Connection. When the LAN Properties dialog box appears, click the Networking tab and be sure the File And Printer Sharing For Microsoft Networks entry is included. (If not, you'll need to install it.)

**Question:** *I upgraded my system, but it doesn't seem that much faster. How can I tell whether the upgrade helped?*

**Answer:** Computer performance is often a subjective thing, and upgrades may seem to help, but few PC users can really tell you how much. One way to truly measure the benefit of your upgrade is to run a benchmark to measure system performance before the upgrade, run the benchmark again after the upgrade, and compare the two numbers. The difference between the two numbers is your percentage of improvement (or decline). For example, use a tool such as Futuremark's PCMark04 Pro (<http://www.futuremark.com>) to gauge your hard drive before and after an upgrade. Suppose the hard drive system returned a mark of 100 before the upgrade and 150 after the upgrade. That would be an improvement of 50%. Now you know for sure. ■

BY STEPHEN J. BIGELOW



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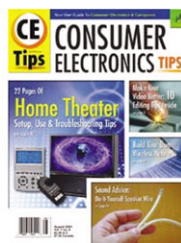
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Here's a list of this month's additional articles available to you online as a paid subscriber to *Smart Computing*. To view these articles, click the link in the Web-Only Articles area in the left column of the home page. (Only subscribers can read the complete article.)



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### Software

**Multimedia:** Cakewalk Kinetic

**Family & Education:** Broderbund Learn To Speak Spanish Deluxe

### PC Operating Instructions

#### Linux: Linux Web Editing

If there's something you want to accomplish, the odds are good that there's a Linux tool to help you accomplish it. Screem is an HTML editor for designing Web pages. It helps you work with the HTML using color-coded tags and drag-and-drop support for inserting links and images.

#### Windows: Use Windows Messenger To Communicate

Instant messaging has started appealing to the masses, not just to technically savvy teenagers. We take a look at Microsoft's popular Windows Messenger so you can keep up.

#### Microsoft Office's Error 1335

As Microsoft Office users know, installing this suite can be troublesome. One error in particular, Error 1335, is especially taxing. We decided to investigate it and share the potential solutions we found.

### Quick Studies

#### Microsoft Word 2002

Find Your Way Through Documents

#### Print Shop 15 Deluxe

Arrange Objects Part 2

#### Security

Combat Spyware

#### Email

Master Spell Check In Outlook & O

#### Browsers

History In IE

#### Microsoft Works 2002

Explore Encarta

#### Microsoft Access 2002

Conflicts In Validation Rules

#### Photoshop

Stamp Out Photo Flaws

#### Roxio PhotoSuite 5

Creating A Panorama

#### HTML

Generate Tables Automatically

#### PageMaker 7

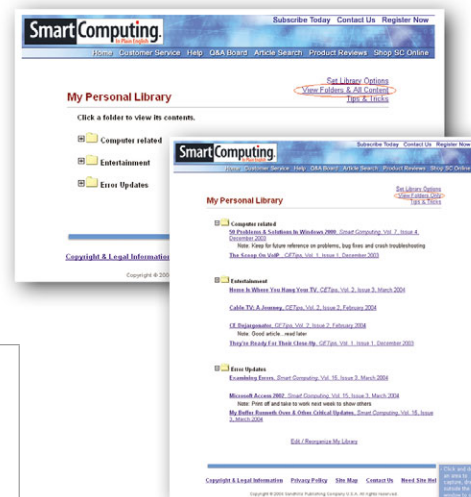
Compile An Index, Part 3

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You will be able to permanently customize your Library display view by clicking the Set Library Options link at the upper right. Choose which setting you prefer to use and click the Change button. From that point on, your library display will always default to your customized option.



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When reading a Daily Tip or Q&A post you want to save, click Add To My Personal Library in the upper right. You will then be asked to choose which folder you want to place the item in, similar to adding articles. To create a new folder, enter the folder name for your item and click Save. You can also add brief notes to these items as well. Don't forget to reference our Daily Tip Archive for past postings to add to your Personal Library.



**Hardware Info Articles**  
[Abit IC7-MAX 3, Computer Power User, Vol. 4, Issue 13, January 2004](#)  
 Note: Read this to learn about Abit.  
[Daily Tip, Unravel The URL \(Security\) - Wednesday, April 21, 2004](#)  
[Q&A, Subject: test, Message #276839, Sent: 4/21/2004 4:02 PM](#)

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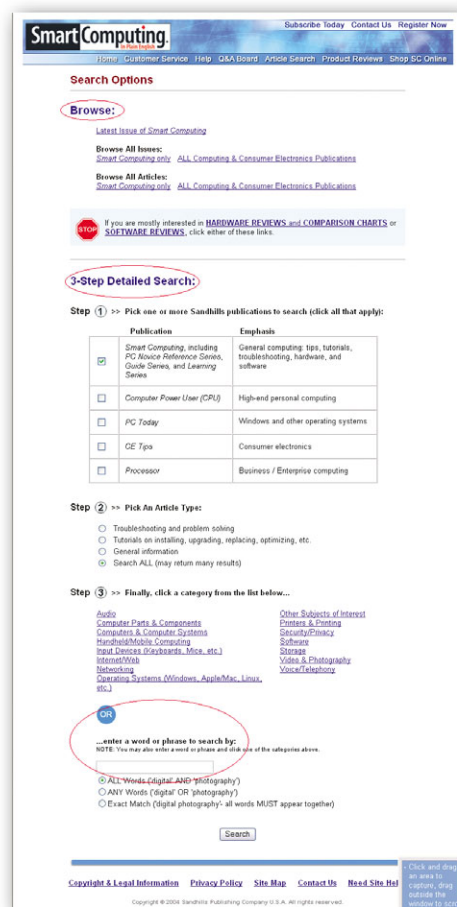
We can't possibly fit every helpful tip, tweak, or troubleshooting tidbit in print. That's why you'll find a wealth of resources at our Web site, <http://www.smartcomputing.com>. Here are some tips for using our Web site to find more information about the articles in this month's print issue.

## Readily Available Utilities: Use Your Computer To Its Full Potential

This month's feature focuses on how to use readily available utilities to make your computer faster and more stable. Make SmartComputing.com one of these readily available utilities. We provide you with many online resources to update both the computer and the user on the latest and greatest happenings in the computing world.

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## Clean Up & Organize Your Computer

Another resource many of our subscribers are utilizing is the new My Personal Library feature we highlighted in the previous pages. My Personal Library allows subscribers to create folders and store items online. With over 20,000 articles, we cover nearly every computing topic you can think of for your reference. As a subscriber you will see an Add To My Personal Library link in the upper right of any full article, Daily Tip, or Q&A post from *Smart Computing* and our sister publications. Click the link to add the items to your library. You can create as many folders and store as many items as you like. My Personal Library keeps them organized for your future reference.





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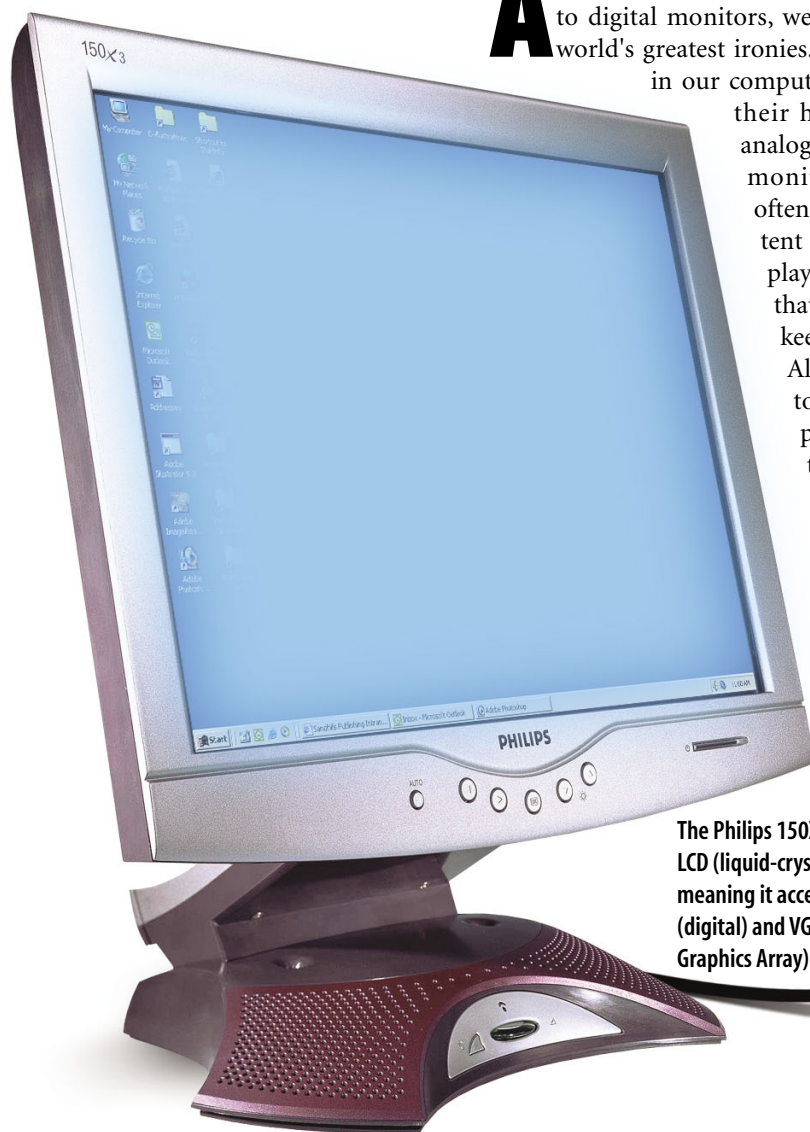
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# Display Goes Digital

## Digital Input Starts For The Head Of The Class

**A**s old, reliable CRT (cathode-ray tube) monitors continue to lose ground to digital monitors, we grow ever closer to losing one of the computer world's greatest ironies. The processors, memory, and other components in our computers toil away in a purely digital environment, yet their hard work is nonetheless converted to ancient analog when we want to view the data on a typical CRT monitor. While this digital-to-analog conversion is often seamless, it seems to make sense that digital content should stay digital from the computer to the display, and many manufacturers now offer equipment that can deliver a digital-only visual experience that keeps data perfectly intact as it travels to your screen. Although the display quality of analog CRT monitors can still match the quality of monitors using a purely digital connection, it's tough to beat the thin, sleek looks of LCD (liquid-crystal display) monitors—many of which now come with digital connections. Let's take a look at how digital connections work and how they differ from trusty, yet old, analog technology.



The Philips 150X3 is a dual-input LCD (liquid-crystal display), meaning it accepts both DVI-D (digital) and VGA (Video Graphics Array) inputs.



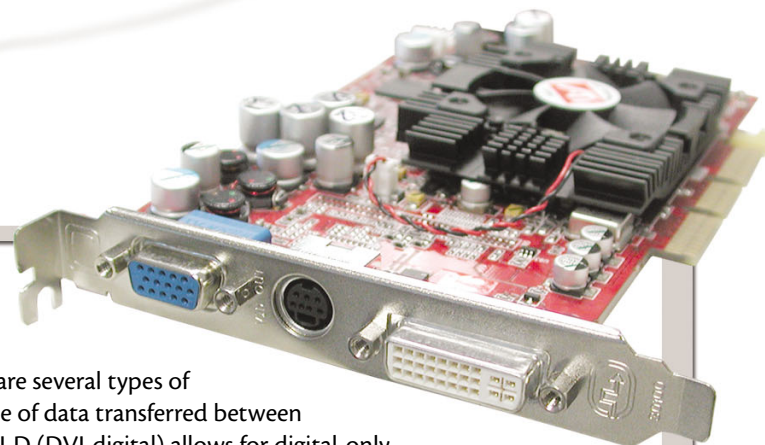
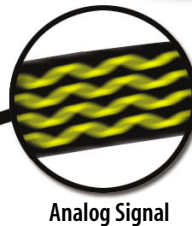
Digital Signal

Although a few CRTs now include digital output, almost all high-end LCD (or flat-panel) monitors include digital connections that can connect to a digital interface on a computer's video card to provide an end-to-end digital connection. To enable the digital connection, a cable connects the monitor's DVI (Digital Visual Interface) to the DVI on the computer's video card. Many monitors and video cards that include digital interfaces also include analog interfaces, but even when an LCD is connected to a computer using an analog-to-analog connection, the data converts back to digital once inside the LCD because the end technology in an LCD monitor is digital. This conversion can create an unstable, shaky picture that usually requires adjustment to correct the problem.

Several digital specifications exist for graphics displays, but the most widespread standard is DVI, created by an industry group known as the Digital Display Working Group. In a DVI graphics environment, a transmitter on the PC's video card receives the digital signal and sends it to a receiver in the LCD. The receiver then takes the digital information and creates an appropriate display based on the data. The connection between the transmitter and receiver consists of a link, or dual links in some configurations, that includes data channels and a clock channel. A single-link DVI configuration supports a maximum bandwidth of 165MHz, which allows for a resolution of 1,280 x 1,024 at an 85Hz refresh rate. A dual-link configuration doubles the amount of available bandwidth and supports resolutions up to 1,920 x 1,080 at an 85Hz refresh rate.

The transmission of data between the transmitter and receiver remains purely digital, which means that the transmitter sends a pattern of ones and zeros that the receiver uses to display the image according to color and intensity for each pixel. Because those ones and zeros are the same ones and zeros the transmitter received back in the PC, the image remains entirely intact from start to finish. In an analog transmission between a video card (or integrated video) and a monitor, the flow of data occurs in a continuous electric signal that interprets the ones and zeros originally sent to the video source. Although this interpretation is usually faithful to the original, it's not an exact representation of the image, unlike the display transferred through a digital connection.

The ViewSonic PF77 is a CRT (cathode-ray tube) that accepts both analog and digital inputs. (Image reprinted with permission from ViewSonic Corporation.)



DVI-D Receptacle Connector

DVI-I Receptacle Connector



DVI-I Pin



DVI-I Socket



DVI-D Pin



DVI-D Socket

## DVI ABCs

Within the DVI specification, there are several types of connections that determine the type of data transferred between the monitor and the video card. DVI-D (DVI-digital) allows for digital-only transmission and provides the highest-quality connection available on a digital monitor. The DVI-D connection uses no analog conversion to transmit the display signal, unlike other transmission methods, and can only connect to another DVI-D interface. DVI-I (DVI-integrated) uses an integrated connection to deliver either digital-to-digital transmission or analog-to-analog transmission and can connect directly to another DVI-I or either a DVI-D or VGA (Video Graphics Array) interface using an adapter. A video card with a DVI-I can connect to either an analog monitor or a DVI-equipped digital monitor. The increasingly rare DVI-A (DVI-analog) connection transmits a DVI signal to an analog monitor, but because digital-to-analog conversion is necessary, the display quality isn't nearly as high as a DVI-D connection delivers.

# Hard Drive Backup & Restore Basics: Part 2

**L**ast month, I provided a strategy for backing up your computer's system partition. This month we'll discuss what preparations you should make *just prior* to a backup and how to recover from a computer disaster.

## Preparing For A Hard Drive Backup

Here are a few things you should do just *prior* to backing up your system partition to ensure your backup is usable and to simplify the process.

**Clean up your hard drive.** There's no sense in backing up information you don't need.

If your system partition also contains your data, go through all of your data folders and delete files you no longer need.

This is a good time to delete unneeded files that came preinstalled on your PC. For example, my computer came with sample audio and video files that consumed 10MB of hard drive space. You might also find help files in other languages you can delete, as well as unimportant Readme files.

Next, run Microsoft's Disk Cleanup tool (click Start, Programs, Accessories, and System Tools) to delete temporary Internet files and cookies, clean out your Recycle Bin, and delete other temporary files.

Unfortunately, the Disk Cleanup tool doesn't clear out every Temp file or folder on your computer, so you might want to search for all such items on your hard drive and clear them out manually. Remember to empty your Recycle Bin after deleting these temporary files.

Finally, clean out your email folders, deleting unwanted messages and emptying your Deleted Items folder. If you're using Outlook Express, "deleted" messages are still taking up space on your hard drive and will still be backed up. You must compact the folders to purge messages that have been marked for deletion. To do this, open OE and select File, Folder, and Compact All Folders.

**Run a virus scan.** There isn't much sense in backing up an infected hard drive. Running a virus scan prior to backing up will ensure that the backup can be used to safely restore your hard drive in the future.

## Disaster Recovery

You might think that recovering from a logical or physical hard drive disaster is as simple as restoring your system partition from your most recent hard drive backup, but you'd be wrong. Disaster recovery is a multistep process.

**Step 1: Back up email info.** If you're still able to boot into Windows, back up all your email related information (email accounts, folders, message rules, Windows address book, blocked senders list, preferences, and signatures) and browser bookmarks. This way, you can restore this information after you restore your system partition,

bringing your email and browser bookmarks completely up to date. If you're unable to back up this information, you'll lose any of the above data that has changed since your last backup.

**Step 2: Restore the system partition.** Use drive-imaging software to restore your system partition from your most recent backup.

**Step 3: Update your virus definitions file.** If you restored from a backup that is more than a day old, there is a good chance your virus definitions will be out-of-date after the restore. You can skip this step if you notice your antivirus software being automatically updated after you restore

your system.

**Step 4: Reapply Microsoft critical updates.** Again, if you restored from a backup that was more than a day old, you may need to reapply some Microsoft critical updates to bring your computer completely up-to-date.

**Step 5: Restore bookmarks and email info.** Restore your email-related information and browser bookmarks from your latest backup, provided your latest backup is more recent than your hard drive image.

**Step 6: Reapply recent changes.** Reapply any changes you made since your last hard drive backup. To facilitate this, I recommend keeping a system log of every change you make to your computing environment. For each change, the log should indicate the date and time the change was applied and a description of the change. The longer you go between hard drive backups, the more important the system log.

**Step 7: Back it up again.** Finally, take a new hard drive backup. This will provide a new, up-to-date stake in the ground for future disaster recovery. ■

BY ALAN LUBER

Alan Luber is an author and computer expert. His new book, "PC Fear Factor: The Ultimate PC Disaster Prevention Guide" (Que Publishing), provides an in-depth look at disaster prevention and recovery. To learn more about the book or to contact Alan, visit his Web site at <http://www.pcfearfactor.com>.



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# Examining Errors

As the underlying software platform, the OS (operating system) receives an unfair share of the blame for PC problems. This month's error messages prove this point. All of the messages come from readers complaining about problems with Windows XP, even though most of these problems weren't actually caused by WinXP itself.



**Problem:** A reader receives an error that prevents him from starting his computer. He follows the error message's instructions to reinstall WinXP, after which the computer runs fine for a while, but then the message returns, forcing the reader to reinstall WinXP again.

**Error Message:** "Windows will not start because the following file is missing or corrupt: \WINDOWS\SYSTEM32\CONFIG\SYSTEM. You can attempt to repair this file by starting Windows Setup using the original Setup CD-ROM. Select 'R' at the first screen to start repair."

**Solution:** This error message indicates the reader's PC likely suffers from a corrupted **Registry** (a Windows database of user settings and personal preferences). Reinstalling Windows should do the trick, at least temporarily, by replacing the damaged Registry with a clean copy. For a permanent fix, the reader should install the latest WinXP service pack. This service pack, referred to as SP1a, contains a number of updates and

patches designed to fix known deficiencies in WinXP.

The reader can access the service pack by visiting the Windows Update site (at <http://windowsupdate.microsoft.com> or via his Start menu) and opting to download WinXP SP1a from the resulting list of available updates. The update is rather large—as much as 30MB, depending on the reader's system configuration—but worth the time and effort.

**Problem:** Another reader complains about a system that reboots unexpectedly at random times and then presents an error message when WinXP starts again.

**Error Message:** "The system has recovered from a serious error.  
C:\Windows\Minidump\020404-01.dmp  
C:\Docume~1\Darle~1\Locals~1\Temp\Wer5E.tmp.diroo\sysdata.xml"

**Solution:** This error message reveals a problem with a **memory dump** (an inventory of the contents of computer memory; sometimes referred to as a minidump). It seems the OS created a memory dump file but forgot about it, so it's attempting to create the file again. The resulting conflict leads to a serious error and the sudden system meltdown.

The minidump error is sometimes associated with an outdated video **driver** (a program that facilitates communication between a hardware component and the rest of the system), so one potential solution is to download a driver update for the video card. The reader can get one by visiting the Support or Downloads area of the card manufacturer's Web site. An updated driver may take care of the problem, but regardless of whether it does, we also recommend downloading the WinXP patch that Microsoft released to combat memory dump problems. The reader can get the update by visiting <http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=3D41A046-0E2C-429F-8F40-F30014ADC3BB> and clicking Download in the upper-right section of the page. Next, he should access the Windows Update site and install WinXP SP1a from the list of critical updates.

Just for good measure, the reader should take a moment to purge his



system of the minidump and Sysdata.xml files by deleting them from the C:\DOCUMENTS AND SETTINGS and C:\WINDOWS folders, respectively. He should restart his computer when the files are gone.



**Problem:** Each time a reader starts his WinXP computer, he receives an error message indicating that he should rename the Program.rpt file. The first time he received the message, it suggested he rename the file Program1.rpt; the second time he received the message, it suggested he rename the file Program2.rpt; and so on.

**Error Message:** “There is a file or folder on this computer called C:\Program.rpt which could cause certain programs to not run properly. Renaming it to C:\Program1.rpt would solve this problem. Would you like to rename it now?”

**Solution:** Program.rpt is a log file that describes the state of the system at the time of a crash. The report, which is often generated by the program responsible for the crash, can help a technician diagnose and fix the underlying problem. The fact that the error message suggests a new

name each time the computer starts leads us to believe the errant application is crashing—and thereby generating a new Program.rpt—each time the reader starts his PC. The reader should review the contents of the report for the name of the offending application so that he can contact the

corresponding software developer for assistance in resolving the issue.

To review the report, the reader should open it in Notepad (from the Start menu, click All Programs, Accessories, and Notepad). After launching Notepad, he can open the File menu and select the Open command. In the Open dialog box, the reader should select the All Files option from the Files Of Type drop-down menu, type `c:\program.rpt` (or the name and location of Program.rpt) in the File Name field, and click Open to view the contents of the report. He should look for anything that indicates the name of the errant program or its developer.

**Problem:** For several months, a reader has experienced a problem with the boot procedure. The process starts out OK but then hangs for as much as 15 minutes when the Windows Is Starting Up screen displays. Eventually, an error message appears on-screen. The reader can close the error message and log on to the computer without further problems.

**Error Message:** “The system could not log you on. Make sure your user name and domain are correct, then type your password again. Letters in passwords must be typed using the correct case.”

**Solution:** From the reader’s description of the problem, it seems like Windows is trying to log in to a user account that doesn’t exist. The proposed solution is to disable WinXP’s Autologon feature and, if possible, delete the incorrect account. Doing so requires the reader to modify the Registry. Mistakes made in the Registry can have dire consequences for the PC, so for this reason, the reader should perform a backup and exercise caution when making changes.

To access the Registry, the reader should open the Start menu, select Run, type `regedit` in the field, and click OK. When the Registry Editor opens, he can select the Winlogon

key at `HKEY_LOCAL_MACHINE\SOFTWARE\MICROSOFT\WINDOWS NT\CURRENTVERSION`. The reader should locate the DefaultDomainName, DefaultUserName, and DefaultPassword values and verify that the corresponding computer name, username, and password are correct. The reader may not see a DefaultPassword value if he didn’t set up a password for his account.

Next, the reader should look for the AutoAdminLogon value. If he finds it, he should right-click it and select Modify from the pop-up menu. In the resulting Edit String dialog box, he can type `0` in the Value Data field and click OK. Doing so disables the Autologon

feature. The reader can now close the Registry Editor. As an extra precaution, the reader should open the Start menu, click Run, type `control userpasswords2`, and click OK. The User Accounts dialog box will appear on-screen. On the Users tab, the reader should select the Users Must Enter A User Name And Password To Use This Computer checkbox and click OK. He can reboot the system when he finishes.

Finally, we suggest that the reader delete any unnecessary user accounts on his computer. He can do so by opening the Control Panel and selecting the User Accounts option. A list of user accounts will appear in the User Accounts window. He can click the unwanted account and then click Delete The Account on the following page. The reader should follow the instructions to delete the account files, as well as the account. Note that the reader cannot delete the Guest Account or any account that is currently open. ■

BY JEFF DODD

Have questions about an error message you’ve seen? Send us your message ([errormessages@smartcomputing.com](mailto:errormessages@smartcomputing.com)) and we’ll try to decipher it. Tell us what version of Windows you’re using, give the full text of the error message, and provide as many details in your explanation as possible. Volume prohibits individual replies.



# Fast Fixes

**Problem:** Microsoft discovered a Windows XP security flaw that could let a cracker attack DirectX and DirectX-related programs. An attack could cause these programs to stop responding.

**Solution:** Microsoft created a 435KB patch to repair this flaw. To download this patch, type the URL (uniform resource locator) we listed below in the Address field of your browser window. After Microsoft's Download Center page loads, type **KB839643** in the Keywords text box and click Go. Click the link named Security Update For Windows XP (KB839643), and on the right side of the page, click Download to begin the file transfer. When the download is complete, double-click the file (WindowsXP-KB839643-x86-enu.exe) and follow the on-screen prompts to complete the installation. You might have to restart your computer after installing this patch. ♦

<http://www.microsoft.com/downloads>

**Problem:** Certain features, such as CD/DVD creation, work too slowly in version 1.2 of Pinnacle Systems' Instant PhotoAlbum. Also, the final disc quality needs improvement.

**Solution:** Update your copy of Instant PhotoAlbum to version 1.3, which includes a faster disc-burning feature, better quality for finished CDs and DVDs, and many other improvements. To download this update, type the URL listed below, point to the Support menu, and click Consumer Products. Scroll down to the Disc Burning section, click Disc Burning Products, and then click Instant PhotoAlbum. Under Download Area, click Updates. In the Instant PhotoAlbum 1.20 To 1.30 Update section,

click the icon for your Windows version. Notice that this file is 20MB, so dial-up users might need a few hours to complete the transfer. Double-click the downloaded file to install the update. ♦

<http://www.pinnaclesys.com>

**Problem:** When you transfer audio files from Microsoft Windows Media Player 9 to a portable music device, you might experience long delays. These delays increase exponentially as you add files to your Media Library.

**Solution:** You can improve transfer speeds by installing this 2.1MB fix from Microsoft. To download the file, visit Microsoft's Download Center, type **KB837272** in the Keywords text box, and click Go. Click the link named Update For Windows Media Player 9 Series (KB837272); make sure you select the version dated 5/28/2004. On the right side of the page, click Download to begin the file transfer. When the download is complete, double-click the file (WindowsMedia9-KB837272-ENU.exe) to begin installing the patch. ♦

<http://www.microsoft.com/downloads>

**Problem:** You might be experiencing a variety of problems with Adobe Reader. The program may not work properly for forms that use Adobe's XML (Extensible Markup Language) forms architecture, or you might encounter problems with barcode-enabled forms.

**Solution:** Adobe released a Reader 6.0.2 update to repair these programming flaws. To download the update,

type the URL we listed below in your browser's Address field, and from the Support menu, click Downloads. In the Readers section, next to Adobe Reader, click Windows. Under the Version 6.0.2 heading, click the link titled Adobe Reader 6.0.2 Update. Read the instructions about using the update, and on the left side of the window, click Download. After you save the 4.2MB file, double-click it to begin installing the update. ♦

<http://www.adobe.com>

## Fix Of The Month

**Problem:** Your Windows XP computer keeps shutting down even though you haven't activated the Shutdown command.

**Solution:** The Sasser worm might be causing your PC to shut down without your permission. You can download and run the 114KB Sasser Worm Removal Tool from Microsoft to delete the worm from your PC. At the Microsoft Download Center, type **KB841720** in the Keywords text box and click Go. Click the link titled Sasser (A-F) Worm Removal Tool (KB841720) and click Download. You don't have to install the tool to clean your PC; instead, you can click Open or Run This Program From Its Current Location. After you accept the end-user license agreement, the tool will remove any Sasser worm components from your computer and display a report that explains whether the removal attempt was successful. ♦

<http://www.microsoft.com/downloads>

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## Windows

**Q** My computer was recently in the shop where it was determined that some Windows updates (not service packs or security updates) were causing the problem. The shop's technician corrected the problem and everything is fine except that I found a folder named Erdundo Cache, which contains 3.71GB of data. I'm sure this is a result of the emergency repair diskette, but can I delete this folder now?

**A** Whenever you use a Windows emergency repair diskette, you create a directory that stores your previous settings just in case you want to roll back any changes you've made. If you're confident that the shop's technician has your system running smoothly now, you can delete this directory. Because the Erdundo Cache folder is quite large, you won't be able to place it in the Recycle Bin. Simply right-click the Erdundo Cache folder and choose Delete. Windows will ask if you want to delete the folder and its contents immediately. Click Yes, and after a few minutes, you'll notice that you've reclaimed a sizeable chunk of your hard drive.

**Q** For years, I've been playing Windows Solitaire and look with fascination at the patterns made by the falling cards when you win the game. I'd love to have a screen shot to use as background wallpaper, but every time I try to activate my screen-capture software (actually, I've tried several products over the years) and see the "Press any key to continue" message appear on-screen, I press a key or click a mouse button to activate the screen-capture software and the cards disappear. How can I capture a screen shot of the Solitaire game's winning effects? Oh, by the way, I'm using Windows 2000 Professional.

**A** The answer is on your keyboard, generally located above the cursor keys on modern 101- to 103-key models. Look for the PRINT SCREEN or PRTSCN key.

When you get your winning Solitaire card cascade, pick a moment and lightly press the key once to copy the image onto your Windows Clipboard. In some cases, a dialog box will appear asking you if you wish to save the captured screen to the Clipboard. Click the Close button and then wait for Solitaire to complete its display. Next, open an application that lets you display and/or edit bit-mapped images, such as Windows Paint or Adobe Photoshop. When the application opens, depending on which one it is and whether it opens a blank canvas automatically, choose either the File or Edit menu to create a new document from the Clipboard and paste the Clipboard contents onto your blank canvas. Save the screen shot as a graphics file (naming it whatever you want), take note of where you save the file on your hard drive, and close the application.

By the way, the Solitaire version that ships with Win2000 and Windows XP is slightly different than the earliest edition that came bundled with all prior Windows versions. Software developers slowed down the new Solitaire version's cascade to compensate for faster processors and graphics cards. So, if someone happens to try capturing a screen shot of Solitaire's card cascade while using a speedy system that just happens to be running an older version of Windows, such as Windows 9x or Windows Me, the cascade may finish so quickly that the added challenge will be to press the PRINT SCREEN or PRTSCN key before the cascade disappears.

**Q** I have a Windows 98 system that starts running slower and slower over a period of a few hours after I boot my computer. When I reboot the system, the cycle begins all over again. Several people have told me I have a memory leak problem. Is there third-party software on the market that will prevent memory leaks? I have already checked my System Configuration Utility and only have a few items loading at startup.

**A** To identify any potential memory leaks, right-click My Computer, select Properties, and then



choose the Performance tab. Take note of Resources and the percentage figure quoted. In a typical Win98 installation, this figure should be from 70% (if you have a lot of activity at startup) to more than 80% (if you have a very clean system with no applications set to start automatically). The figure will never reach 100% because various background processes that Windows needs to function are going to consume some of these resources. And, as you continue to work while Win98 is running, the percentage figure will diminish over time until you have to reboot your PC to restore it.

Many people assume that the Resources listing is reporting a combination of the total amount of RAM available in your system, plus the amount of clean hard drive space Windows uses as its dynamic swap file (also known as **virtual memory**) when your RAM begins to run out. That's not the case, so adding more memory to your computer won't help.

Instead, the Resources listing refers to a small number of memory pools, called **heaps**, that Win98 uses to manage such services as menu images, icons, animation, printing, the on-screen rendering of fonts, and so on. There are three main memory heaps, and each is limited to 64KB in size. As you start and end various applications, the apps will utilize memory from these heaps and, eventually, the programs should release that memory when you close them. But the release of this memory doesn't happen immediately, and in some cases it doesn't happen at all.

It's when Windows can't recover these heaps of resources that your Resources figure drops. As it drops, Win98 has more and more trouble juggling demands on its diminishing memory heaps, and sooner or later, you'll have to reboot your computer to replenish them.

When an application doesn't release the resources it grabs, that's called a **memory leak**. Some apps (notably some browsers) do it continuously as you work. Other apps only leak each time you start and exit them. Curiously enough, earlier versions of Microsoft Word were some of the worst memory leak culprits. We don't have enough space here to list all of the situations and applications that can cause memory leaks in Win98, but it's an endemic problem.

There are some products that purport to wrench resource memory away from applications when you close them and, by doing so, restore the heaps to near their optimum size, but frankly we haven't been impressed by the products we've tried so far.

Instead, we recommend that you try doing a little sleuthing. Examine your Startup folder (from the Start menu, click Programs and Startup) to see what's loading when you start Windows. And, as you noted, the System Configuration Utility is a good tool you can use to see what applications are running at startup. You can even

use the System Configuration Utility to selectively deactivate various startup apps so you can find out which one is causing the most problems with memory leaks. To launch the System Configuration Utility, open the Start menu, click Run, type **msconfig** in the field, and press ENTER.

If your hardware and checkbook could support upgrading to Windows XP (Home or Professional) or Win2000, then doing so would certainly be the easiest solution to your problem because both of these OSes (operating systems) allocate resources in an entirely different way than earlier Windows versions. WinXP and Win2000 still have resource heaps, but the heaps have no upper limit, and although there are still bad apps to be found, they don't have the same effect on WinXP and Win2000 systems.



## Utilities

**Q** I have read many articles about the wisdom of backing up system data and the ways in which to do it, but I've never seen any in-depth discussion regarding how to restore that data when Windows stops functioning. Even the Windows and hardware manuals seem to gloss over this part of the backup-restore equation. Can you give me any pointers?

**A** Backups are like parking/emergency brakes. Some drivers think they may never need them, but if and when these brakes do become absolutely necessary, drivers will be happy they have them. Unfortunately, most computer users wait until they're in dire straits before understanding how their backup software works. Hopefully we can shed some light on the process and give you some pointers that will make it easier to act with poise and patience when you're in the middle of restoring your system and data.

Backups are usually required in two situations: when you (or something else) accidentally deleted a file and need to recover it or when your computer's hard drive has reached the end of its life. In either case, you need to restore your system and the data you backed up to a second location or storage device, such as to removable media or a second hard drive. Some of the more common types of removable media are CD-RWs (CD-rewriteables) and magnetic tapes. Recordable DVDs also are making inroads due to their large storage capacities. If you have a lot of data and you don't need to keep it off-site, a second hard drive can give you ample storage space at a price that removable media can't beat.

One step that many users fail to undertake is testing their backups. By testing we mean attempting to restore the contents of a backup to a temporary directory. This test proves that your backup software and

hardware are working properly. Although this may seem obvious, we've encountered far too many computers where backups weren't properly configured or where the backup equipment failed. We've even seen users store their backups on floppy diskettes and then place the floppies next to an unshielded speaker, which degraded and damaged the contents of the floppies over time. Our recommendation is to test your backups on a monthly basis.

Another problem we've encountered is overuse of backup media. If you're using a magnetic storage system (Zip drive and disks, Jaz drive and disks, or similar devices), the media isn't designed to function indefinitely. Each type of media has a limited number of "writes" before it begins to fail. Depending on how often you back up your system, we recommend replacing your media on an annual basis. If you're using a hard drive or optical disc, these concerns typically don't apply because they have a longer life span.

If you simply need to restore a file or directory, the process is usually quite simple. Verify that the file or directory is on your backup media (how you do this will depend on your backup software). Next, choose where you want to restore the file. We recommend restoring it to a temporary directory and then moving it after it has been restored. When you finish, breathe a deep sigh of relief and pat yourself on the back for taking the time to back up your system and data (and test that backup).

If your computer has suffered a catastrophic failure and massive data loss, your course of action is a bit more complex. At this point, you're looking at investing a significant amount of time in order to bring your system back to life.

First of all, you need to determine what caused the failure. If you find that the culprit is a hardware component, replace it before investing any time in restoring your data from backup. Next, you have two options regarding your restoration strategy: one, restore your Windows installation from your backup media, or two, simply restore the user data, such as your email, data files, etc. Our recommendation is to use the second strategy.

Trying to restore an entire Windows installation (and your other applications) isn't an easy task. Depending on the backup software you're using, it may not even be possible. Even if the backup software claims that restoring the Windows installation is a breeze, we're dubious about its success rate.

The strategy we recommend takes more time, but in our experience, it has proven itself to be more reliable. First, you'll need to perform a clean installation of Windows, either from a Windows installation CD-ROM or from your vendor's Windows restoration CD-ROM.

Restoration CD-ROMs often include drivers for your computer's hardware. For third-party hardware, you'll need to install the appropriate drivers. Now is a good time to update any drivers from manufacturer Web sites, assuming you have access to the Internet. (Or perhaps you have Internet access via a second computer that's networked to the computer you're trying to restore or you can save those updated drivers on some type of removable media.)

Next, you'll want to access Windows Update to get the most recent patches from Microsoft. After Windows Update finishes installing the updates, you'll need to re-install and reconfigure any third-party applications you had on your system. It's also a good idea to visit software developer Web sites and download any necessary updates for your third-party applications.

Now it's time to restore your data files, which include your email, My Documents files, and any other files you decided to back up. At the end of this process, you should have your system back to normal. The process isn't an easy one, but it's better than the alternative: losing all of your data permanently. Finally, don't forget to configure your system's backup software so that you'll have another backup ready if you ever need it again.



## This Old Computer

**Q** My Dell Inspiron 2500 notebook came with WinMe and a WinXP upgrade CD-ROM. When I upgraded to

WinXP, I started having problems with typing. Once I type something, no matter what software I use, the cursor will jump back to a previous word and start displaying what I'm typing there. It happens while I'm typing in Microsoft Word documents, WordPerfect documents, and email messages. Can you suggest a fix for this problem?

**A** It's standard practice to regularly visit the manufacturer sites of any hardware devices you own, including the supplier of the computer itself, to see if the companies have released any updated drivers associated with the product(s). It's especially necessary if you want to upgrade a notebook to a new OS version (or a different OS, for that matter, such as from Windows to Linux) because far more proprietary engineering goes into notebooks than into desktop PCs.

We checked Dell's online technical support site (<http://support.dell.com>); used the keywords "Inspiron 2500," "Windows XP," and "keyboard" to conduct a search; and found 10 listings, five of which were for updated drivers. While you're at the Dell technical support site, you also should check to see if you have the most recent BIOS (Basic Input/Output System) update for the

Inspiron 2500's motherboard. Note that you may not find a driver or BIOS update that explicitly references your problem, but after installing the available driver updates for WinXP that are specific to your notebook model, other problems—including the one you mention—may go away, as well.



## Online

**Q** I like to keep a clean cookie jar. Is there any way I can delete cookies and still leave the passwords, usernames, and credit card information intact for Web sites where I have registered and/or have subscriptions?

**A** Cookies are files that Web sites deposit on your computer to store information about you. Each cookie is specific to a particular Web site and isn't accessible by other Web sites. Cookies also are quite small and don't usually contain very much data. Because cookies are site-specific, you don't really need to worry about another Web site hijacking your data. However, you do need to worry about viruses and other forms of malicious code accessing your cookies. Because of this, we agree that it's a good strategy to periodically eliminate cookies and limit the type and number of cookies you accept. Although many Web browsers let you manage your cookies, it's often easier to use a cookie management utility, particularly if you want to access Web sites that require usernames and passwords. We don't recommend that you store credit card information via cookies.

You didn't mention which OS you're using, but our favorite cookie management utility works on most Windows versions. Cookie Crusher (<http://www.the-limitsoft.com>) acts as a proxy, managing your cookies as you surf the Web. Cookie Crusher retails for \$15, but you can test it during a free 30-day trial period.

**Q** Microsoft removed the Web Accessories tools when it released Internet Explorer 6. In Internet Explorer 5, all I had to do was right-click a Web page created in a text editor to open a menu with an Images List option above Properties. Web Accessories showed me information about Web addresses, image numbers, and pixels, and at the bottom of a Web page, it listed downloading times for that page with three different Internet connections. Now I don't know if a Web page I've designed takes five seconds or 50 seconds for a viewer to see. Is there any program I can use with Internet Explorer 6 that will give me this kind of information?

**A** Web Accessories are a bundle of eight tools Microsoft designed for IE5. Despite Microsoft's

warnings, you can install Web Accessories and use them with IE6, although we must admit that they work with varying amounts of success. To download Web Accessories, visit <http://www.microsoft.com/windows/ie/previous/webaccess/ie5wa.msp>.

In our tests, the Images List utility worked properly except for two bugs. One, the page it created appeared incomplete, but when we pressed F5 to refresh the page, it displayed the results correctly. Two, it didn't display the download times for various Internet connections. Despite this, you might find that Web Accessories still has some value.

To determine the download speed of a Web page, you'll need a second utility. Many HTML (Hypertext Markup Language)-editing applications include tools to help you calculate download times, but if you're using a text editor such as Notepad or WordPad for your Web design, you'll need a different tool. Standalone utilities for determining download times for Web pages fall into two general categories.

The first group consists of free Web-based calculators that require you to know the size of all the images on a Web page, as well as the size of the HTML file. With this information in hand, you simply plug in the total page size, and the calculator will estimate the download time for various connection speeds. The main disadvantage of these utilities is that you need to know the total size of all of your Web content for any given page. This is fine for a small Web site, but for a complex site, determining the total size can be a lot of work. You'll find an example of an online calculator at <http://www.kolias.com/computers/downloadtime.htm>.

The second group consists of tools that scan a Web page, retrieve the images included on the page, and then calculate download times for various connection speeds. Other than the previously mentioned Web Accessories from Microsoft, we were only able to find one similar tool: Atomic WebPage Size Calculator (<http://www.smartdownloads.net/download-624.html>). Unfortunately, after using the Atomic WebPage Size Calculator, we can't recommend it to you. Although it claims to determine the download time based on the URL (uniform resource locator) that you enter into its search field, we were unable to make it function properly after installing it on both our WinXP Home or WinXP Pro computers. For a program that retails for \$9.95, Atomic WebPage Size Calculator was a disappointment.

With such a meager collection of tools available to you, we recommend that you use one of the free online calculators. As your needs increase and your Web site grows, it might be worth investing in an HTML-editing application that includes a built-in download estimator.



# FAQ

## Frequently Asked Questions

Answers to users' most common questions about  
***Video & Display Performance***

**FAQ** My Windows XP Desktop seems slow as it displays all the sliding windows, fades, and other bells and whistles. How can I speed it up?

WinXP uses an array of visual effects to spruce up your Desktop space. Although added features make the Desktop more visually attractive, they also can become time-consuming. For example, it only takes a moment for a new dialog box to slide open, but when you're dealing with a Desktop full of dialog boxes, the tiny delays can become annoying. Desktop features also demand a small amount of system processing power, which is hardly noticeable on newer systems, but it may be enough to cause a performance lag on older PCs.

Fortunately, it's easy to tone down your Windows Desktop effects. Just click Start, Control Panel, Performance And Maintenance, and Adjust Visual Effects. Choose the Visual Effects tab. The easiest way to perk up your Desktop is to simply select the Adjust For Best Performance radio button. As an alternative, you can try selecting the Let Windows Choose What's Best For My Computer option if you wish. Apply your changes and click OK.

**FAQ** What does the graphics hardware acceleration slider do, and when should I use it?

Use the graphics acceleration slider to adjust the range of features handled by your graphics hardware. Normally, you'd want to run the graphics card with all of its acceleration features enabled, but occasional hardware incompatibilities and driver bugs may result in system stability problems, such as crashes and unexpected reboots. Reducing the acceleration slider systematically turns off graphics features in an attempt to stabilize your system until you're able to identify and resolve the underlying problems.

You can access this slider by right-clicking the Desktop and selecting Properties. Choose the Settings tab, click the Advanced button, and then choose the Troubleshoot tab. The slider should be set to Full. As you move the slider to the left, note which features

become disabled. Click cancel when you finish playing with the slider (don't click Apply to save any changes unless you're troubleshooting).

**FAQ** Why does my streaming video playback frame rate seem so much smoother on one PC when compared to another computer?

Streaming video is a delivery technique that feeds data from a streaming server to your computer across an Internet connection. This makes your connection to the Internet a critical issue. Slow dial-up connections are typically not adequate for good-quality streaming media. The media may indeed stream, but the download will probably be choppy, with frequent breaks for buffering. An always-on cable or DSL (Digital Subscriber Line) connection is much faster, allowing far more data to transmit with little (if any) chance of disconnections.

Always select a streaming source that's appropriate for your connection. For example, selecting a 100Kbps (kilobits per second) stream for a dial-up connection won't work well. If you're not sure about your actual online connection speed, check it with an online bandwidth test, such as McAfee's Internet Connection Speedometer (<http://us.mcafee.com/root/speedometer.asp>).

(NOTE: It's also possible that the streaming server is congested. Try accessing streaming video at different times of the day and see if there's better availability in the morning or in the evening.)

Another handy trick is to increase your buffering time; this downloads more of the video stream to RAM before starting the playback and reduces the stutters and breaks caused by poor Internet connections. For Windows Media Player, open the Tools menu, click Options, and choose the Performance tab. Make sure the Detect Connection Speed (Recommended) radio button is selected. Then, select the Buffer radio button and increase the buffering time to 10 seconds or more. Click Apply to save your changes and click OK.



## Refurbished Dells, ZoneAlarm License & Slow Going For Norton Personal Firewall 2002 Users

### ACTION EDITOR

Are you having trouble finding a product or getting adequate service from a manufacturer? If so, we want to help solve your problem. Send us a description of the product you're seeking or the problem you're having with customer service. In billing disputes, include relevant information (such as account numbers or screen names for online services) and photocopies of checks. Include your phone number in case we need to contact you.

Letters may be edited for length and clarity; volume prohibits individual replies.

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*I received a new Dell 2400 series desktop computer in January 2004. Shortly after receiving it, the system began to slow down noticeably. After trying everything I know to fix the problem, I contacted Dell's tech support. After reinstalling Windows several times, the company finally offered to send me a replacement system. The system arrived several weeks later than it was supposed to, and it was a 4600 series model instead of a 2400 series. The new model was missing the CD burner I ordered originally, so Dell told me to swap the optical drives. At this point I noticed the new system was a refurbished model that also contained outdated software that was nothing like the software package I originally ordered. The new system also lacked recovery CDs. Dell informed me that because I've had the system for more than 30 days, the company can replace the system with a refurbished model, but this certainly isn't what I ordered. Is there anything you can do to help?*

**Al Sanderlin**  
**Jacksonville, Fla.**

We spoke to our PR contact at Dell. It took Dell a couple of weeks to contact Al, but when it did, it offered him the choice of a complete refund or a new system. Al decided to opt for the new system. After not hearing back from Dell for some time, Al called the rep, at which point he learned that Dell was planning to ship him another refurbished system. Al protested, and the next day, Dell relented and sent a completely new system. The new system arrived, although it took longer than promised (perhaps because Dell had to switch gears from shipping a refurbished system to a new system). This time the components and software were accurate, and Al was satisfied with the new system.

*I recently bought ZoneAlarm Pro on CD-ROM (distributed by Broderbund). I installed and registered the software according to the directions, but I included the wrong email address*

*in my registration. As a result, I never received a license key. I found directions online that allowed me to reinstall and reregister the product, but I still have not received a license key.*

**Kenneth Kimball**  
**Reston, Va.**

We hate it when companies force us to divulge an accurate email address, but that's what junk email accounts are for. Although Zone Labs develops ZoneAlarm and is responsible for the downloadable version, the retail version is distributed by Broderbund and it handles the license keys for the retail version. We contacted Broderbund, and a few days later Kenneth received his license key.

*After downloading an update for Norton's Personal Firewall 2002, my Internet connection speed slowed to a crawl. I thought it was my DSL (Digital Subscriber Line) connection, but disabling the firewall seems to make everything run properly. Unfortunately, my version is no longer supported. Is there any way to get a fix from Symantec?*

**Kenneth Fish**  
**Benton, Ky.**

We've received other such complaints. Although Symantec no longer supports this version, the problem can be traced to one or two files that appear to go missing after updating the firewall. Windows XP users should have both Symids.sys and Symidsco.sys on their systems, while Windows 98/Me users should have Symids.vxd and Symidsco.vxd installed. In most cases, it's only the Symids file that's missing. You can find replacement files and instructions at <http://www.google.com> by searching for the relevant file. This fix only applies to Norton Personal Firewall 2002 (also installed with Norton Internet Security 2002).

# Unwarranted Warranties

Every time I walk into a Best Buy or other electronics superstore, I'm set upon by hordes of adolescent employees who expend enormous amounts of energy pleading and arguing with me (and stooping, occasionally, to veiled threats) because they dearly wish me to purchase, of all things, a piece of paper. Oh, they're happy to sell me a computer or television set, but what they *really* want me to buy is a piece of paper.

There's an incredible selection of products available at your local electronics superstore: enough electronics to meet the needs of the average NSA listening post and more than enough kitchen appliances to keep Emeril and Julia both happy. These stores inventory thousands of items, including computers, stereos, refrigerators, televisions, microwaves, CDs, DVDs, cables, speakers, and headphones. If it has buttons or lights—or if it connects to something that has buttons and lights—these stores carry it.

And which product do you suppose has the highest profit margin? Computers? Refrigerators? Cameras? Cell phones?

No, the item on which these stores make the most pure profit is a piece of paper called an extended warranty.

This makes sense. After all, warranties aren't real goods; they don't need to be manufactured, tested, warehoused, shipped, and shelved. A warranty is intangible, really just peace of mind represented by a few slips of paper and underwritten by what is in essence an insurance company, and it costs the retailer nothing. In fact, in most cases the underwriter pays the retailer to offer these extended warranties. In effect, it's a concession, not unlike the dry cleaners, optometrist offices, and banking outlets one sees these days at superstores. Those folks pay the retailer for the space they rent and for the right to sell their products in the retailers' high-traffic stores.

So here's a product that costs the store nothing at all—*everything* the store makes on it is profit. Is it any wonder that they're so intent on selling you that extended warranty? Do you *really* think they care that your new cell phone could up and die on you as soon as you get it home? Or that replacing your notebook computer's display will cost you more than the computer is actually worth, should you carelessly drop the unit out of a window?

No, what they care about is making money. And that's OK. They *should* make money. It's why they're in business; if they didn't make money, they'd be gone. Then where

would we go when we wanted to pick up a television, a CD, a new movie, our dry cleaning, a home loan, a washing machine, and a hot dog, all at the same time?

The fact that they're in business to make money is fine with me. I applaud them for it and for helping to keep prices low and selection wide. But the sale of extended warranties bothers me. Warranties cost the retailer nothing and offer a very high return, so the store is encouraged to sell them *regardless* of whether they actually offer any value to the consumer.

There may well be cases in which purchasing an extended warranty is a wise investment. But I feel that we shouldn't need to make that investment. We ought to be able to rely on the manufacturers' standard warranties and on the reputations of both the manufacturer and the retailer. If the product is too shoddy for the manufacturer to offer a reasonable warranty as part of the product, the product should be improved.

What we need here is a well-mannered rebellion, a quiet revolution. Naturally, I have a plan. Here's what I propose:

Let's all walk into our local electronics superstore and pick out a fairly expensive product, some big-ticket item that we'd really like to have: a nice 42-inch television or that powerhouse computer we've been wanting. Have the salesperson write it up. As soon as he utters a single word about purchasing an extended warranty, say: "Oh . . . Wait. <meaningful pause> An extended warranty? Do I need that? <furrowed brow> You mean the warranty that comes with the product isn't good enough to protect me? Well, in that case, never mind." Then turn around and walk out the door.

If enough of us follow the plan, we'll have spearheaded a revolution. They won't dare stand up to us. After all, as John Kennedy once said, "Those who make peaceful revolution impossible will make violent revolution inevitable." Not that we'd get violent, of course. A little noisy, maybe. ■

BY ROD SCHER

Rod Scher is a former software developer and a recovering English teacher. He's also the publication editor of Smart Computing and will no doubt continue in that position until such time as his boss reads this column. Contact Rod at [rod-scher@smartcomputing.com](mailto:rod-scher@smartcomputing.com).







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